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# Worldwide Report

ENVIRONMENTAL QUALITY

No. 360

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# WORLDWIDE REPORT

## ENVIRONMENTAL QUALITY

No. 360

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CONSERVATION GROUP, GOVERNMENT REPORT SEES THREAT TO ECOLOGY

Canberra THE AUSTRALIAN in English 11 May 82 p 3

[Article by Fia Cumming]

[Text]

DEVELOPERS and governments who ignore conservation values will pay a high price, according to the draft National Conservation Strategy.

The draft, released yesterday, is the result of six months' consultation between Federal and State governments and key groups in industry and conservation.

It is now available to the public for discussion before being finalised in February next year.

The head of the Department of Home Affairs and Environment, Mr Don McMichael, said the global conservation situation was now at a "very dangerous level".

Australia was better off than many countries, but faced severe problems with soil, water and forests as well as other potential crisis areas.

Dr McMichael said the aim of the strategy was to make debate more rational, and to show developers and conservationists they had the same long-term interests.

"Publication of the strategy won't solve all the problems, but it will take people a long

way forward in their thinking," he said.

"At the moment, so often developers' proposals are put forward without any regard to conservation largely because they don't have any idea of the impact of their proposals."

He said it would help to avoid conflicts in situations like the Tasmanian dams, oil drilling in the Great Barrier Reef, and logging at Terania Creek by showing development and conservation could work hand in hand.

"Development aims to meet human needs and wants, and conservation aims to ensure that the material basis of development is sustained and the quality of life is protected so we may enjoy the fruits of development," the draft says.

It lists three aims of conservation vital for development:

- Maintaining essential ecological processes and systems such as soil, water, air and nutrient cycles.
- Preserving genetic diversity in wild plants and animals to make better products and species in the future.
- Ensuring sustainable use of species and systems such as fish, forests, grazing lands.

CSO: 5000/7547

# VICTORIA, UNIONS IMPOSE RESTRICTIONS ON USE OF HERBICIDES

## Victorian Government Ban

Melbourne THE AGE in English 11 May 82 pp 1, 3

[Article by Philip Chubb]

[Text]

The State Government has moved to restrict severely the use of the herbicide 2, 4, 5-T and reduced the level of its highly toxic component dioxin by 1000 times.

A temporary ban has been placed on aerial spraying of the herbicide, which is suspected of causing foetal defects and other health problems. The ban will remain in force while tougher legislation on aerial spraying generally is prepared.

The Minister for Health, Mr Roper, said yesterday the Government would be prepared to ban 2,4,5-T outright if the measures agreed on by Cabinet were not sufficient. "But we believe the current range of measures will remove the threat to Victorians. We have taken action on an urgent basis to remove that threat," he said.

Mr Roper said the cost of alternatives to 2,4,5-T was far higher and maybe just as dangerous. Another herbicide about which doubts have been raised, 2,4-D, did not represent the same level of problem, he said. A copy of a report on 2,4,5-T to the New South Wales Government had been requested as soon as possible.

Among the measures adopted by the Government were:

- The withdrawal of the highly volatile ester formulations of 2,4,5-T. (Ester formulations are faster acting and more effective.)

- Regulations will be introduced to prohibit the sale of it in containers of less than one litre. Mr Roper said this was a com-

mercial quantity and the move would restrict the availability of the chemical through supermarkets, hardware stores and nurseries.

- All Government workers using 2,4,5-T will be trained and private operators and users will be encouraged to attend the sessions.

- All Government workers will be required to wear full protective clothing and they will be subject to regular urine sampling.

- A ban on misting machines, used to spray the chemical, will be applied until more information is available. All other spraying will be prohibited within 50 metres of inhabited dwellings and blackberry spraying will be prohibited when there is ripe fruit.

Local government, Forests Commission and Crown lands users of 2,4,5-T will have to give public notice before they spray in an inhabited area. A withholding period will also be introduced between the time of spraying and when produce from animals is offered for sale.

Mr Roper said: "We believe there is sufficient evidence to suggest that we should be concerned, and the community should be concerned, about the current use of 2,4,5-T. We wanted to restrict its use in the community and to ensure that ordinary Victorians and operators were protected."

He said Government authorities were the main users of 2,4,5-T and that existing stockpiles would be used under the conditions imposed.

The Victorian president of the Farmers and Graziers' Associa-

tion, Mr Miles Bourke, said he was relieved that the Government had not banned 2,4,5-T outright.

The withdrawal of all ester formulations of 2,4,5-T could be a point of controversy and the association would look seriously at the Government's decision, he said.

(Ester formulations of 2,4,5-T are far more volatile than the amine formulations; ester forms can penetrate plants easily through stalks and leaves and are therefore more economical and faster in their killing. Amine formulations do not invade a plant well unless they are taken up through the roots, a longer and less effective method than the esters' attack.)

The association would negotiate with the Government about its measures and still contended that the chemical was safe and vital to the survival of many farmers, Mr Bourke said.

The executive director of the Aerial Agriculture Association of Australia, Mr Lindsay Cox, said the restrictions would affect only about 10 air spraying companies

in Victoria: 2,4,5-T was not widely used in aircraft spraying operations in this State, he said.

But the restrictions were a bad omen and the association would protest at the Government. The restrictions were a sign of the Labor Government's intention to place far more stringent regulations on aerial sprayers.

Any regulations on the use of 2,4-D would seriously affect many spraying companies who apply it to cereal crops in Victoria, he said.

The effects of the new regulations would be felt most in forestry operations where aircraft and some helicopter spraying of 2,4,5-T was done to remove unwanted growth around plantation trees, Mr Cox said.

A spokesman for the chemical industry body, the Agricultural and Veterinary Chemicals Association of Australia, Mr Brian Flower, said: "We are pleased the Victorian Government at this stage is not to ban it out of hand. We cannot agree on the given knowledge that there is any need to ban aerial spraying application out of hand."

#### ACTU Executive Action

Melbourne THE AGE in English 12 May 82 p 5

[Article by Peter Stephens]

[Text]

BRISBANE. — Unions will ban the use and handling of the herbicides 2,4-D and 2,4,5-T after a decision by the ACTU executive yesterday.

The executive said that unless acceptable safeguards existed, the unions would refuse to deal with the chemicals.

The detailed policy, which comes only a day after the Victorian Government severely restrict the use of 2,4,5-T calls for State Governments to:

- Restrict the herbicide to agricultural and forestry use and to zones at least 10 km from populated areas.
- Ban aerial spraying of 2,4-D and 2,4,5-T unless the spraying can be demonstrated to be safe.
- Give sufficient warning and publicity to the days and areas on which the spraying will take place.
- Keep detailed records of areas sprayed, date of spraying, the

substances and quantities sprayed and the names and addresses of the sprayers. These records would be made available to workers and their representatives on request.

The policy calls for all people involved in using and manufacturing the chemicals to be trained and alerted to the hazards of handling the substances. All people exposed to the herbicides in their manufacture and use, particularly women, should be given protective clothing including overalls, gloves, head and neck coverings, boots, goggles and/or face shields and respiratory devices.

The policy says all people exposed to the chemicals should have a thorough medical examination every six months, including blood and urine tests.

In its decision announced on Monday, the State Government met several of the main points in the ACTU's proposal, including the claims for protective clothing, training of 2,4,5-T users, a temporary banning of aerial spraying, and giving public notice before spraying an inhabited area.

The herbicides are suspected of causing foetal defects and a wide range of health problems.

Editorial Comment

Melbourne THE AGE in English 12 May 82 p 13

[Text]

THE State Government has responded with carefully graduated restrictions to public concern and scientific doubts about the safety of the herbicide 2,4,5-T, a component of the notorious Agent Orange defoliant used in Vietnam. The new range of precautions announced by the Health Minister, Mr Roper, are — pending further evidence one way or the other — a reasonable compromise between the suspected hazards of 2,4,5-T and its economic importance. In recent years clusters of birth defects were reported in the Yarram district in Gippsland and the Mossman area north of Cairns after heavy spraying with the herbicide. Evidence of an increase in miscarriages in an American town in 1979 led to an emergency ban on 2,4,5-T by the US Environment Protection Agency. Last week, one of the world's most eminent cancer researchers, Professor Sir Richard Doll, said the group of chemicals, of which 2,4,5-T and the more widely used 2,4-D were a part, caused two types of cancer, although the risk was extremely small. Earlier, it was disclosed that five Lands Department employees engaged in herbicide spraying had died of cancer or heart attacks since April 1979.

The National Health and Medical Research Council has declined to recommend a ban on 2,4,5-T until "conclusive" proof is found that it is injurious to public health. While the medical

and scientific evidence has remained in dispute, the State's multi-departmental pesticides review committee has pointed out that a ban on 2,4,5-T would cost \$3.6 million a year through the use of more costly alternatives. If 2,4-D were also banned, the cost would be \$13.4 million. The more potent 2,4,5-T is used against blackberries and about 30 other noxious weeds which, if not controlled, would cause heavy losses in agricultural and forestry production.

The Government has temporarily banned aerial spraying of 2,4,5-T until tougher legislation is drafted. In addition, the highly volatile ester formulations of the herbicide would be withdrawn, its sale in containers would be restricted to commercial quantities to discourage domestic use, Government workers using the herbicide would be required to wear full protective clothing and be subject to health tests, private users would also be encouraged to attend training sessions, the use of misting machines would be banned, spraying within 50 metres of dwellings would be prohibited, and notice of spraying in inhabited areas would have to be given. The use of 2,4-D, which is regarded by the Government as less hazardous, would not be restricted. The new Government should be commended for acting promptly but cautiously on a controversial matter in which its predecessors appeared to put economic considerations above health fears based on strong circumstantial evidence.

CSO: 5000/7547

STATE, FEDERAL GOVERNMENTS SURVEY TASMANIAN RESOURCES

Sydney THE SYDNEY MORNING HERALD in English 12 May 82 p 16

[Article by Joseph Glascott]

[Text]

The Commonwealth and Tasmanian Governments are studying a detailed resources survey of the Tasmanian South-West.

The survey is a result of a \$35,000 grant by the Commonwealth to the Tasmanian Government over the past three years.

Mr Allan Cadman, MP, parliamentary secretary to the Prime Minister, Mr Fraser, has announced the survey in a letter to protesters who signed petitions against damming of the Franklin River in Tasmania for a hydro-electric power scheme.

Mr Cadman, in his reply to the petitioners, said the Commonwealth was "fully conscious" of the great beauty and unique value of the wilderness area of south-west Tasmania.

It had taken a number of steps that recognised its value to Australia.

lians.

The Commonwealth had listed the area on the Register of the National Estate.

As a result, Commonwealth ministers and authorities could take no action which would adversely affect the area.

The Commonwealth had also nominated the area for listing as a world heritage area. The nomination would be considered by the World Heritage Committee at its next meeting this year.

This nomination recognised that south-west Tasmania was one of the few remaining temperate wilderness areas in the world.

The area for listing included the South-West National Park, the Franklin-Lower Gordon Wild Rivers National Park and the Cradle Mountain-Lake St Clair National Park.

However, Mr Cadman said Mr Fraser had made it clear that decisions on south-west Tasmania were the responsibility of the Tasmanian Government.

CSO: 5000/7547

# BAD EFFECTS OF SALINITY ON SUNDARBANS TOLD

Dacca THE NEW NATION in English 27 May 82 pp 1, 8

[Article by Syed Badiuzzaman]

[Text]

Soil salinity in the Sundarbans due to the diversion of the Ganges water at Farakka rose to an all-time high level this year leading to an extensive mortality of sundri, gewa, keora and other trees.

According to a recent survey carried out by forest experts, salinity at Chandpai, Kassaiabad and Burigualini areas was recorded at 2500, 6000 and 4500 micromhos in March 1982 as against 500, 3100 and 3100 micromhos respectively during the corresponding period in the previous year.

With the gradual decrease in the upland flows, salinity inside the Sundarban forests has increased 15 times as compared to that in 1976 and spread far inland upto more than one hundred miles.

There is, however, a seasonal variation of soil salinity, which shows an upward trend from the month of February and reaches the peak during April-May and then falls from June-July and comes to the lowest level in October-November.

Owing to continuous rise in salinity in the Sundarban areas, the overall regeneration of the plants of different timber species decreased to

a great extent this year as compared to the years of 1977, 1978, 1979 and 1980. Of all them, sundri species is worst affected.

The forest is deteriorating from bad to worse and the present quantum of regeneration which is far below the requirement will also not survive unless sufficient water is ensured to flush the Sundarbans during the dry season in order to arrest the alarming situation.

It is observed that the mortality is much more in the younger age classes than the older ones as the young trees having tender and undeveloped root and shoot system cannot tolerate the unfavourable edaphic changes brought about by the reduced flow of the Ganges.

The survey revealed a tremendous decrease in total number of regeneration in all the compartments where sample plots had been laid down for study. The decrease was found as much low as 100 percent in certain cases of regeneration.

Bangladesh already sustained a heavy loss to the tune of over Taka 200 crore on account of a total 50.72 million cft timber loss due to the death of sundri alone since 1976. It may be mentioned that the loss is perpetual.

According to the Forestal Forestry International and Engineering Company Limited, the total commercial timber volume of the Sundarbans is about 700 million cft and sundri alone contributed about 520 million cft which is 73 percent followed by gewa 16 percent and other species like keora, kankra and passur 11 percent.

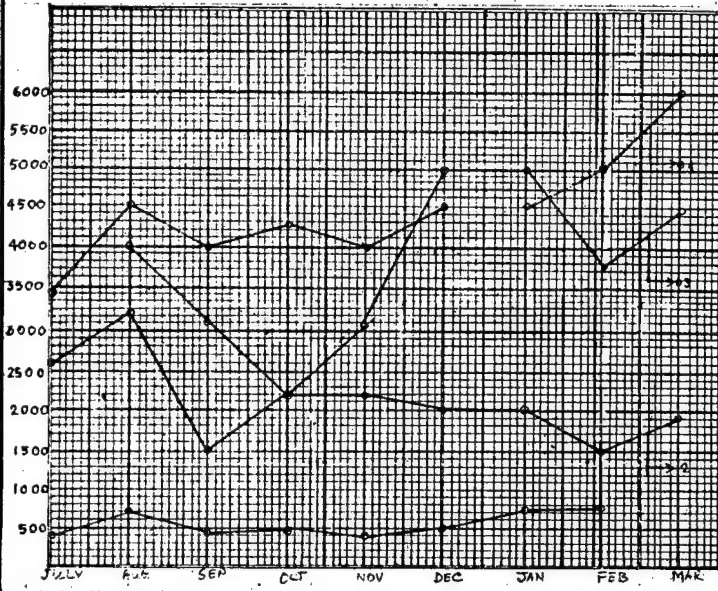
If the reduction of fresh water supply from the upland continues, the entire forest of quality class I and II will be bound to turn to scrub forests (class III) sustaining a loss of at least 37.3 cft timber per acre. The areas for annual felling in quality class I and II are 485 and 180 acres respectively and as such the total timber loss will amount to 362.00 million cft valued at Taka 36.20 crore.

The survey said when the quality class I and II will turn into quality class III, the quality class III will then turn into a desert or barren land.

At the present market rate, the Sundarbans has the potentialities of supplying timber worth Taka 60 crore annually. But with the deterioration of the quality classes, the eco-system of the entire Sundarbans will be radically changed and the forests will be devoid of vegetation.

# SEASONAL VARIATION OF SOIL SALINITY JULY '81 TO MARCH '82

1. Station ... ..Bogi.
2. ,, ... ..Chandpai.
3. ,, ... ..Kassiabad.
4. ,, ... ..Burigualini.



CSO: 5000/7062



# EROSION YIELDS VAST AREAS TO BRAHMAPUTRA

Dacca THE NEW NATION in English 30 May 82 p 2

[Text]

**RANGPUR, May 28 :** Vast area of Saghata and Phulchari thanas in Rangpur district has been swallowed by the erosion of Brahmaputra river. More areas are under such threat in the same areas, for the speedy breaking of river.

Pakhimari, Gobindi, Bulekhamari, Gubgohi, Rupchora, Hatbaki, Bugar Patal and Bhagiroha fully and Bharatkhal and Katlamari have been partly devoured into river since the "Phulchari Floger Project" did not come out success as was accepted by WAPDA in 1979. Bhaishkal, Bahas, Borontor, Bushata and Satalcha villages are facing extinction threat if immediate

steps are not effected.

The Brahmaputra water linked with Ghagat river is about to swallow more places all round. Due to hindrances the unfinished dam of Phulchari project is affecting Bharatkhal river and flowing south-east. People are bringing trees, bricks, sand bags in the current of water from April, 15, voluntarily. The Sub-divisional Officer of Gaibandha Subdivision distributed 140 maunds of wheat to the participants as incentives to work.

It may be mentioned that one contractor entrusted with the

Phulchari Floger Project, left it half finished. As a result, it is dragging slowly for past 2 years. However, before the monsoon, two and half crore feet of soil are essentially to be removed with five thousand labourer. Only then, the official and public institutions such as Tahsil Office, girls school, primary school, Jaikali Temple, Mazar of Baropir and a cattle hat in Bharatkhal, may be saved from ensuing monsoon onslaught.

About 240 miles of cultivable lands right from the Shoal of Kala Sonar to Sariakandi will be saved from ruination.

Moreover, the government will save lakhs of takas from the liability of shifting Tista Rly. Ghat here & there and rehabilitating 50 thousand of affected people.

CSO: 5000/7063

## SEVERE DROUGHT AFFLICTS RAJASTAN

Rangoon THE WORKING PEOPLES DAILY in English 1 Jun 82 p 6

[Text]

**NEW DELHI, 30 May—Famine and severe drought are hurting more than 20 million people in the burning desert state of Rajasthan, officials said Sunday.**

Of the state's total 33,305 villages, the Rajasthan State Government has declared 23,246 villages affected by famine, officials said.

In 1,000 villages, especially in the remote western part of the state bordering Pakistan, drinking water has dried up.

Villagers in the western areas around the desert cities of Jaisalmer, Bikaner and Barmer have to walk several miles each day to fetch jugs of water which are balanced atop their heads.

Officials have sent 192 trucks carrying water tanks to the region but many areas are not easily approachable because there are few paved roads across the loose desert sand.

The severe drought gripping Rajasthan for the fifth consecutive year has forced 700,000 emaciated cattle to migrate to other states searching for water and food. Large herds of dying cattle are frequently seen trudging through New Delhi's busy streets on their journey north to greener pastures.

Impoverished Rajasthan's northern border comes within 30 miles of New Delhi and the

state spreads across the Thar Desert for 132,152 square miles.

Nearly the entire state's population—more than 20 million people living mostly in isolated, dirt-poor villages—are reeling under the famine and severe drought, officials said.

They fear the crisis will worsen during the dry, hot weeks of June.

The state Government asked the Army to help rush drinking water to the villages but the Army refused, explaining they could help only in unique brief emergencies. The ongoing drought in Rajasthan could not be considered such an emergency, the Army told the officials.

The Army said it would help if the state provided them water tankers and paid all costs, but state officials complain Prime Minister Indira Gandhi's Government has delayed sanctioning drinking water assistance for unknown reasons.

The drought also destroyed 50 per cent of the state's crops of maize, wheat, millets, and cotton, officials added, causing market prices to rise and creating food shortages.

DEFORESTATION DRIES UP DAMPEST PLACE IN WORLD

Colombo DAILY NEWS in English 7 Jun 82 p 10

[Text] NEW DELHI, Sunday. The dampest place in the world, Cherrapunji in the northeastern Indian state of Meghalaya, has been rendered barren by indiscriminate tree-felling, it was reported today.

A study by the Delhi-based centre for Science and Environment expressed concern that India is rapidly becoming a vast wasteland with 0.15 million hectares of forests claimed by developmental projects every year.

Deforestation, including the illegal felling of trees, takes another million hectares every year, the study quoted by the UNI agency said.

Nearly half of India's cultivated land suffers from various degrees of soil erosion. Between quarter to a half of the lands brought under irrigation in the last 30 years could go out of cultivation permanently because of growing soil salinity and water logging, it warned.

The study felt there could be no rational economic development without environmental conservation. "The neglect of the environment results in increased inequalities in which the poor suffer the most" quoted the study as saying.

CSO: 5000/5767

## DESERTIFICATION REPORTED IN HIMALAYAS

Bombay THE TIMES OF INDIA in English 27 May 82 p 6

[Text] **SILIGURI, May 26 (PTD):** Streams have dried up, hills are denuded and a desert is spreading fast from the middle Himalayas to the southern foothills.

These are the observations of Mr. Sunderlal Bahuguna, father of the "Chipko" movement, and his five young colleagues who have just completed the third phase of 3,000-km. 80-day Kashmir-to-Kohima foot march via Nepal which they undertook on February 25.

**HUNGRY MIGRANTS**

The Chipko leader, who has suspended the march here for the monsoon, said: "During our march we could see a desert fast spreading toward the southern foothills from the middle Himalayan region."

"The hills are barren and cultivation on steep slopes and digging the roots

of the bushes for fuel have accelerated soil erosion at an alarming rate," he said.

"The blue lines showing rivulets in the maps are actually dried streams with sand and gravel deposits all around. Fields once irrigated are now waste lands," Mr. Bahuguna said.

The team members, he said, were haunted by the awful sights of devastation in Jhimrukhol near Kwari, Chhapekhol (Penthari), Chutrabesi, Reedi Khola, Roosi Khola, Katari and a number of other places.

He said the hungry hill people are migrating to the foothills. "And we could see queues of village women with pitchers for a few litres of drinking water from fast disappearing water sources."

The only ray of hope in this region were the Terai forests but these too are vanishing. Mr. Bahuguna said.

"The most distressing thing is the clear felling of natural forests to raise new plantations of commercial species."

The felling operations are in progress from Damak to Jhil-Jhile in Machi.

During the 1,262-km. foot march from Mahakali to Machi, Mr. Bahuguna and his team addressed 15,000 people, mostly students, about the importance of forests for the survival of mankind.

Mr. Bahuguna said the foot march would be resumed again in September through the hilly regions of West Bengal, Sikkim, Bhutan, Assam, terminating at Kohima in Nagaland.

Besides Mr. Bahuguna, the foot marchers included Mr. Dhoom Singh Negi, Mr. Sahab Singh, Mr. R. Prabhakar, Mr. Prabhakar Bandari from India and Mr. Harihar Upadhyaya from Nepal.

CSO: 5000/7060

## ENVIRONMENTALISTS CONCERNED OVER GOA'S FORESTS

Calcutta THE STATESMAN in English 28 May 82 p 4

[Text]

PANAJI, May 27.—A group of leading environmentalists, after two days of discussions here on Goa's forests, have expressed concern at the magnitude of the damage to the forests by opencast mining operations.

The discussions sponsored by a New Delhi-based organization called Lokayan, centred on "the staggering range of vast heaps" of mining rejects and "overburdens" of iron ore mines which are "destroying the forests and the adjoining agricultural land".

The group was intrigued by the fact that the official statistics of the Forest Department had taken no note of this damage. It was estimated that out of 1,300 square kilometres of forest area, about a fourth had been lost owing to widespread mining rejects and overburdens.

Prominent environmentalists who participated in the workshop were Mr B. V. Krishnamurthy, former FAO adviser, Professor J. Bhandopadhyaya of the Indian Institute of Management in Bangalore, Mr Mewa Singh of the Wildlife unit of Mysore University, Devi Goenka of the World Wildlife Fund, Smitha Kothari of the Lokayan project in New Delhi and representatives of Kalpavriksha, an environmental protection and action group from New Delhi.

The participants visited major forest areas, including Rivona, Suloorna, Sanguem and Saleulim. It was widespread destruction of nature in Usgaon, Bicholim and other areas. The group has alleged the involvement of three ruling party MLAs in the "looting" of forest.

The group has suggested speedy replacement of eucalyptus by sound vegetative cover and recommended an immediate ban on the export of wood from Goa to safeguard forests.

It thinks that without a corresponding limit on commercial utilization of forests, the hardening attitude of the Government is irrelevant because the "high level of corruption" in forestry practices will dilute all serious attempts to conserve forest resources.

EDITORIAL COMMENTS ON NAIROBI UN ENVIRONMENT CONFERENCE

Christchurch PRESS in English 17 May 82 p 20

[Editorial: "Environment Conference"]

[Text]

The United Nations Environment Conference in Nairobi, summoned 10 years after the first such conference was held in Stockholm, assembled last week in a mood of gloom. The conference opened with a forecast that the world faces ecological disaster; studies on improvements in the environment between the two conferences have been described as "a catalogue of disappointments." Claims have been made that in the last decade there has been a marked deterioration in the quality of the environment.

To some extent this mood of gloom is justified. Even if it is conceded that small gains have been made in some areas, the question remains: can the world afford to move so slowly? A case can be made that small progress in some areas has been matched by serious reverses in others. Efforts to curb pollution of the environment have lost steam as other problems have taken priority in times of economic recession. In many parts of the world, overgrazing and deforestation, soil erosion and over-fishing are all continuing at unacceptable rates. Shifts towards reliance on renewable energy and to resource recovery and recycling have been hesitant and inadequate.

The years since the Stockholm conference have not been wholly without gains: a change of attitude has become firmly entrenched. Lip service at least is given to the notions of eliminating pollution and of conserving resources by many who, a decade ago, would have scorned the ideas. No industrialist in New

Zealand presumes openly to any right to pollute the environment; when industries still create pollution, they are generally shamefaced and apologetic about it and are under pressure from public opinion and new laws to do better. Environmental pressure groups now have a recognised place in New Zealand political life, even if they are not always heeded when they should be. Governments are tending to err on the side of caution.

New Zealand, for example, is to outlaw the use of chlorofluorocarbons, even though there is still some uncertainty about their effects on the ozone layer in the upper atmosphere. Eventually, the Government is going to have to respond to pressure to reduce lead in petrol and will require motorists to pay the price of the change. The long-term importance of this perceptible shift in attitude should not be discounted.

Some of the feeling of gloom evident in Nairobi undoubtedly stems from the undue optimism at Stockholm. The solutions no longer seem as simple as they did in the early years of the movement to protect the environment. In many areas there is still a lack of sufficient information to supply the best answers. Measuring the seriousness of the threats posed by various pollutants is a constant problem; assessing the capacity of the environment to recover from pollution is another. Until such questions can be answered with some certainty, decisions on where to direct the counter-attacks are difficult and many even entail more waste or destruction.

Environmental problems are now seen more clearly to be intimately linked to intractable social, political, and economic problems including population control, the desperate struggle of the world's poor to survive, and the willingness of people in the rich countries to accept even a slight diminution in their standards of living.

Recognition that many environmental problems have no easy solution and are related in turn to economic and political problems which are themselves difficult to solve is not cause for becoming discouraged or for abandoning efforts to protect the environment. Such recognition is cause for a more sober, realistic appreciation of what is needed if the bright hopes expressed at the 1972 Stockholm conference are to be realised. If the Nairobi conference moves beyond wringing its hands to resolving to continue what can now be seen to be a much more difficult battle than was first supposed, it will do the world community some good.

CSO: 5000/9071

# STRONGER GOVERNMENT ACTION ON LEADED GASOLINE URGED

Christchurch PRESS in English 18 May 82 p 20

[Editorial: "Lead in Petrol"]

[Text]

The amount of lead in New Zealand petrol is causing concern in the community. The Government has not ignored this concern. The amount of lead in New Zealand petrol should be about halved by the middle of this decade. Even then the level will still be well above what is permitted in many other countries and is expected to continue to give rise to levels of airborne lead in certain parts of New Zealand cities well above levels that are considered to be safe.

It may be argued that there is no cause for concern because the concentrations reach unhealthy levels in only a few places and that high levels of lead are permissible in New Zealand petrol because of the relatively low concentration of vehicles in most parts of New Zealand. The dangerous concentrations of lead occur in cities, and the number of people exposed to them is sufficiently high to warrant concern, even if over the greater part of the country airborne lead is not a serious problem.

The problem is that reducing or eliminating lead from New Zealand petrol and still providing cars and other vehicles with a fuel that ensures good engine performance will not be done cheaply. The figure commonly mentioned is \$60 million, the cost of the extra crude oil that would have to be imported to maintain the octane rating of New Zealand petrol without adding lead. There will, however, be savings to offset some at least, of that additional cost. If lead is indeed responsible for the damage that it is believed to cause, the cost of the extra health care and the extra educational costs of children affected by airborne lead must add up to a tidy sum.

The Government's contention that the costs of reducing the amount of lead in petrol to a much lower level than it has anticipated, or of eliminating lead from petrol altogether, are not worth incurring is a contention that can be accepted only if the case against lead has been exaggerated or is entirely mistaken. The Government's case rests on an implicit claim that the environmental case against lead is at least not proved. From the nature of the case, absolutely conclusive evidence that even low levels of lead in the air impair the intellectual performance and affect the developing brains of children, will probably never be obtained.

The evidence available is sufficiently disturbing for the Government's implicit

claim to be questioned. Because the victims are children and the suspected effects are on minds and intellect, it is better to err on the side of caution and not apply a rigidly economic approach to the problem that might be appropriate if the evidence were precise and the consequences of airborne lead were exactly measurable.

The Government's reluctance to take sufficiently strong action on what many believe is a serious health hazard has prompted speculation that the oil companies have had an undue influence on the Government in this matter. The suspicions are given added strength because other governments — and not governments which are usually unduly alarmist about environmental hazards — have taken much more rigorous action. The suspicions are given added strength, too, because the pressure on the



Government from within New Zealand to do more than it has been willing to so far, is coming not from environmental cranks, but from responsible people and sometimes official bodies.

To lay this allegation to rest, the Government must meet the mounting community concern with frank study of the problem. The case against lead in petrol is already sufficiently strong to require the Government to justify its stand, if it can, and not require those pressing for a reduction of the level of lead in petrol, to justify theirs. The requirements are a cost-benefit analysis which is sufficiently broad to be free of any charge that the health of children has been subordinated to economic cost; proper monitoring of levels of airborne lead; an assessment of the evidence tending to convict lead as a serious environmental hazard; and a full investigation of the alternative ways of maintaining the octane rating of New Zealand petrol if permissible levels of lead are made much lower than the Government is aiming to make them by 1985. The last requirement is pressing because the best solution to the problem may turn out to be one which will require modifications in the design of the extensions to the Marsden Point refinery. It is also a requirement that will mean a higher bill for oil and a higher price for petrol. The consumers must also be persuaded of the good sense of taking action.

CSO: 5000/9071

CAMPAIGN TO SAVE WILD, SCENIC RIVERS TO CONTINUE

Wellington EVENING POST in English 10 May 82 p 5

[Text]

Environmentalists have little confidence in the river-protection legislation approved by the Government last year, and will continue to press for better controls, according to spokesman Mr Tony Brunt.

Mr Brunt was re-elected chairman of the Save the Rivers Campaign at its conference in Wellington at the weekend. He said the campaign had affiliates with a total of 64,000 members.

Affiliates included Environmental Conservation Organisations (ECO); the Federation Mountain Clubs of New Zealand; the Federation of Freshwater Anglers; the Native Forest Action Council; the NZ Canoeing Association; the Federation of

Rifle, Rod and Gun Sportsmen; the NZ Jet Boat Association; the NZ Salmon Anglers' Association, and the Royal Forest and Bird Protection Society.

The campaign was formed in the 1981 election year to fight alongside acclimatisation societies for improved legislation to protect wild and scenic rivers. It was resolved at the weekend to continue the campaign, although new legislation had in fact been approved by the Government.

Mr Brunt said few people at the conference had any confidence that the laborious procedures set down in the new act were going to be very successful.

## Warning

The real problem was that the act was administered by the Minister of Works. Mr Quigley had already begun publicly warning about an over-concern for wild and scenic rivers, Mr Brunt said.

"This is in a situation where we have 67 dams and not a single river is yet protected."

The power development division of the Ministry of Works and Development appeared to carry a lot more weight than the water and soil division, Mr Brunt said.

"For example, we've learnt that while hundreds of thousands of dollars has been earmarked for hydro-electric investigation this year, the water and soil division hasn't budgeted for any investigations to provide information about scenic and recreational values of rivers for which protection orders are likely to be sought."

# ECOLOGISTS WIN FIGHT TO SAVE VIRGIN NATIVE FORESTS

Wellington EVENING POST in English 7 May 82 p 6

[Text] Virgin native forests in the Pureora State Forest Park, including the Waihaha forest, are to be given extended protection from logging.

In a decision which follows years of conservationist pressure, the Minister of Forests, Mr Elworthy, said virgin stands in the Waihaha block not protected at present would be added to the Waihaha ecological reserve and virgin stands in the north Pureora block would also become ecological reserves.

Some logging of native timber will continue in the Waihora block with the agreement of the conservation movement.

Conversion to exotics will be made in areas previously heavily logged and now covered in blackberry and fern.

The decision was welcomed by the Minister of the Environment, Dr Shearer, who said he was delighted that logging of virgin forests would virtually cease.

Announcing the decision, Mr Elworthy said the move to protect virgin stands had taken into account the report and recommendations of the Pureora State Forest Park advisory committee, public submissions on the King

Country draft regional management plan, and the findings of the kokako research group.

"The Government sees protection of the virgin podocarp stands and areas of kokako habitat as being desirable, and thus work will begin to finalise protection of these areas," he said.

Mr Elworthy said the establishment of an exotic resource will give some security to the local sawmilling industry and thus to jobs.

"The Government has looked closely at the public submissions and the views of the forest park advisory committee.

"The decision to protect native forest and continue establishment of exotics is a reasonable and balanced one which should be welcomed by all reasonable people," he said.

Dr Shearer said the decision was the culmination of a five-year personal campaign of support for the conservation movement's efforts "to preserve one of the last substantial pieces of dense, virgin lowland podocarp forest in the North Island."

"The decision ensures an adequate habitat not only for the endangered kokako, but also for several other native birds, such as the kaka and native parakeets, whose survival would have been threatened if logging had continued in these forests."

Dr Shearer said the preservation of Pureora and Waihaha was a small compensation for two centuries of continuous destruction of New Zealand's native forests.

"In the past 140 years, 11 million hectares of indigenous forest have been cleared, and many native birds driven to extinction.

"For the west Taupo forests, at least, the era of axe, chainsaw, and bulldozer is over," he said.

CSO: 5000/9071

## AUCKLAND PLANNING SCHEME STRESSES PROTECTING ENVIRONMENT

Auckland NEW ZEALAND HERALD in English 17 May 82 p 20

[Text] Heavy emphasis is placed on protecting the natural environment in the Auckland regional planning scheme.

The scheme includes policies for the protection of the region's landforms, soils, water, flora and fauna, coasts, islands and open spaces.

The scheme says its key environmental principle is that the diversity and quality of natural resources need to be maintained through conservation and preservation.

### Duplication

This would mean that the Commission for the Environment would have to consult the Auckland Regional Authority about any environmental impact reports for projects in the region, it says.

Agencies need to work together in managing the region's natural resources, the scheme says. Some responsibilities are now duplicated and streamlining is needed.

It sees the identification of the location, magnitude and quality of natural resources as necessary for implementing "sensitive environmental planning policies."

Local bodies and maritime planning bodies would have to identify areas of "outstanding scientific import-

ance" in district and maritime planning schemes and protect them.

### Four Areas

The scheme ranks 53 areas which, it says, help to give the region its rich and diverse natural history.

Four areas — the Kaipara Harbour and Peninsula areas, Rangitoto Island, the Manukau Harbour and coast area, and the Firth of Thames and its coastal area — are ranked as being internationally significant.

Twenty-three areas are identified as nationally significant and 26 as regionally significant.

The Government, the authority and local bodies shall ensure that the areas are preserved, the scheme says.

Local bodies would have to:

- Identify areas of representative and rare indigenous plants and wildlife habitats and protect them "unless some compelling need of higher value to the community can be demonstrated."

- Provide controls in district schemes to ensure a balance between urban development and keeping trees and forest areas.

Many landforms in the region, some nationally or globally significant, are en-

dangered and should be protected, the scheme says.

The scheme establishes planning policies for each of 10 coastal areas in the region, based on their landscape attributes, scientific and ecological value and recreational value.

### Coastal Land

The development of foreshore area must be prevented, it says, to maintain a natural coastal equilibrium, and coastal subdivisions should be carefully assessed before any development is allowed.

Local bodies administering coastal areas, and maritime planning authorities, would have to ensure that no significant coastal land development takes place on foredunes and other unstable landforms.

Surrounding foreshores, coastal waters and the seabed are essential components of the Hauraki Gulf islands as a natural and recreational resource, the scheme says. "Protection of that resource needs to cover the marine areas."

### Transport Costs

Greater attention needs to be given to providing urban open space closer to where people live because transport costs are rising and resources need to be conserved.

Local bodies, says the scheme, should identify and map significant landscape features and develop policies for their protection and include them in district schemes.

Local bodies would be required to protect trees important to urban areas.

## FOREST SERVICE MAY BE REVAMPED AS PUBLIC CORPORATION

Auckland NEW ZEALAND HERALD in English 6 May 82 p 3

[Text] Press Assn Wellington

Moves are under way to revamp the Forest Service as a public corporation.

A report by the Forest Service Review Committee is expected to be discussed by the Government caucus today.

It suggests that the new forestry commission should remain within the public sector but its board should have majority private sector membership.

If the review committee proposals are accepted, administration of the huge state forest resource would be removed from the departmental structure.

**Minister**

Decisions would be made by a basically commercially oriented board whose chief officer was no longer directly, constitutionally responsible to the minister, although the minister would retain ultimate control.

The move is expected to give greater commercial freedom, allowing decisions on money and staffing without constant reference to the Treasury and the State Services Commission.

It would make the Forest Service into a similar body to Air New Zealand and the Railways Corporation.

The Government will also consider recommendations

from its officials, which are understood to favour more commercial freedom and more efficient use of forestry assets. But the officials say this is possible within the existing structure.

The review committee says the present arrangement is too rigid and not efficient or effective enough in maximising profits from forestry assets.

**Not Immediate**

It says a commission would be potentially less bound by red tape, although there would be difficulties in striking a balance between commercial and environmental and conservation interests.

The proposed changes would not mean the immediate dismantling of the

Forest Service, or big changes in staff numbers.

The review committee consists of representatives from the State Services Commission, the Treasury, the Forest Service and the private sector.

It was set up in 1980 after Parliament's public expenditure committee recommended that the Forest Service be restructured into a limited liability company, similar to Air New Zealand, to cut costs and improve financial management.

The Forest Service's estimate of expenditure for the current financial year is \$232 million.

In 1980, the latest year for which figures have been published, it made a net profit of \$5.5 million.

## USE OF CHLOROFLUOROCARBONS TO BE REDUCED, PHASED OUT

### No Timetable Set

Wellington EVENING POST in English 7 May 82 p 1

[Text]

The use of chlorofluorocarbons as propellants in aerosols, cooling agents in refrigerators, and foaming agents in the manufacture of plastics, is to be reduced and ultimately phased out.

That was announced jointly today by the acting Minister of Health, Mr Young, and the Minister for the Environment, Dr Shearer.

The Toxic Substances Board will be asked to recommend the most effective ways of phasing out their use.

Dr Shearer told the "Post" the policy change was announced today because he leaves New Zealand on Sunday for a United Nations Environment Programme conference in Kenya next week, at which the use of chlorofluorocarbons would involve a small part.

It would be a clear indication to the conference, he said, of another area of progress New Zealand had made since the big Stockholm environmental conference 10 years ago.

### Nothing specific

No definite phase-out timetable has been set.

However, manufacturers who use the substance had already indicated a wish to discuss the decision with him, and he would do that on his return in a month.

The Government's decision, the two ministers said, was motivated by concern that chlorofluorocarbons could deplete the ozone layer, with serious repercussions for New Zealand, increasing rates of skin cancer and damaging horticultural crops and seafood.

### Industry Users Surprised

Auckland NEW ZEALAND HERALD in English 17 May 82 p 8

[Text]

**The Government's decision to reduce and ultimately phase out the use of chlorofluorocarbons — the agent which harms the earth's ozone layer in the atmosphere — has taken industry users by surprise.**

Chlorofluorocarbons are used as propellants in aerosols, cooling agents in refrigerators and as foaming agents in the manufacture of plastics, but already in New Zealand their use has been widely reduced by industry.

The Government's decision last week to phase them out came only days before the Minister for the Environment, Dr Shearer, was due to attend a United Nations conference on the environment in Nairobi, Kenya.

### No Consultation

A spokesman for the aerosol industry said the decision was "a public relations exercise for Dr Shearer to take to Nairobi."

While the decision reflected Dr Shearer's desire to reduce the use of fluorocarbons, it came suddenly

and without consultation.

Since 1976, fluorocarbons in propellants have been reduced in New Zealand by 38 per cent and now 70 per cent of propellants do not damage the ozone layer.

"We thought we were acting responsibly," the spokesman said. "Three

months ago we supplied information updating our progress.

"The announcement came out of the blue. It seemed unfortunate to do it that way when we have been liaising closely with the Government."

The executive director of the Plastics Institute, Mr Bruce Dunlop, did not foresee the announcement, although he knew the Government had been looking at the possibility of phasing fluorocarbons out.

As a foaming agent, chlorofluorocarbons are widely

used in producing packaging material, in furniture and other polyurethane products.

#### Cooling Agent

Mr Dunlop said he was aware of the dangers of the agent but the only substitutes found so far were more harmful. A solution had yet to be discovered, he said.

The technical director of Fisher and Paykel Ltd, Mr Graeme Currie, was also surprised by the suddenness of the announcement.

His company was also reducing the use of fluorocarbons as a cooling agent.

CSO: 5000/9071

PEOPLE'S REPUBLIC OF CHINA

INTERNATIONAL HEARING ON HUMAN ENVIRONMENT ENDS

OW170752 Beijing XINHUA in English 0709 GMT 17 Jun 82

[Text] London, June 16 (XINHUA) -- "Action or disaster" is the slogan of a two-day international public hearing on the human environment which ended here today. More than 100 environmental experts from 39 countries took part in the discussions and debate, the aim of which is to provide the world community with information on the environmental challenges likely to face the world during the next ten years and to exchange views on how to halt environmental degradation.

Many famous scientists made speeches at the two-day hearing. According to their views, the main cause of the changes in the atmosphere is the burning of fossil fuel, including oil and coal. They called on all governments to take measures to control pollution in the atmosphere, including more efficient use of energy, increased use of non-fossil fuels and installation of the best available pollution control technologies at large industrial facilities using fossil fuels.

Many scientists pointed out that soil erosion will be a very serious problem in the human environment during the next ten years if no protecting measure is taken. According to data presented at the hearing, land in tropical regions is more susceptible to erosion than in temperate regions. More than half of India's land suffers from soil degradation as a result of floods, salinity and alkalinity. More than 22 percent of the crop land in Africa is currently at risk from unchecked soil erosion.

It was revealed at the discussions that deforestation is giving rise to various damage in the human environment, especially in tropical moist forests. Some scientists estimated that if deforestation of the tropical moist forests continues at the present rate, one million species could become extinct by the end of this century. One speaker pointed out that more than a quarter of all Central American tropical moist forests has been destroyed since 1960 for the production of beef.

All the participants agreed that the dramatic growth in population and poor management of land and forests are the principal causes of deforestation and soil erosion. They called for closer international cooperation to push the protection of the human environment to a new stage and urged the world community to attach more importance to the environmental issue and mobilize the whole society for environmental protection.

CSO: 5000/2126



ST LUCIA'S COMPTON PLEADS FOR CARIBBEAN FOREST PROTECTION

Bridgetown ADVOCATE-NEWS in English 27 May 82 p 3

[Text]

CASTRIES, St. Lucia, Wednesday, (CANA) — Prime Minister John Compton has urged Caribbean foresters to consider forestry as an integral part of the wider environment upon which agriculture and nation building depend.

Mr. Compton's advice to the region's agriculturists came in an address to the first Caribbean foresters workshop which opened here last night.

He said that the greatest danger facing the region's forestry resources were indiscriminate and uncontrolled use of chain saws, hurricanes, floods and a range of other factors.

He told delegates that the region would continue to reap the sad harvest of its wanton destruction, until forestry was given a higher priority in national policy decisions.

"We will only stand to gain when there is a planned programme of re-afforestation and forestry management and when the legislative instruments designed for the protection of the forestry and water resources are respected and enforced.....the decision to protect our forest resources must come from us," he said. Mr. Compton warned that it

was pointless having legislation on the statute books, if the laws were not enforced.

"It is pointless having forestry management in small areas while broad areas of the natural forest are destroyed," he added.

The Prime Minister said that St. Lucia's forestry problems were aggravated by the ravages of Hurricanes David in 1979 and Allen in 1980 and by torrential rains and accompanying landslides in 1981.

"If the damages inflicted by these natural disasters are not repaired quickly the consequences will plague St. Lucia for generations to come," he said.

Mr. Compton said these damages were two years old and there was still no response to an appeal for assistance for forest rehabilitation under the project known as "food forest".

"The forest areas which were so badly damaged have not merited even a visit from the officials of various aid donors. The rehabilitation of forests here, urgent though they are, lies beyond our financial capacity, and cries out for urgent external assistance," Mr. Compton added.

CSO: 5000/7548

## STRONG OBJECTIONS TO USE OF HERBICIDES REPORTED

### Agronomists Request Ban

La Paz PRESENCIA in Spanish 6 May 82 p 11

[Text] Cochabamba, 5 May--The College of Agronomists of Bolivia has asked the minister of agriculture and campesino affairs to order the suspension of the use of herbicides in Chapare and other agricultural areas of the country.

The authorities of the National Antidrug Traffic Council at the present time are using the herbicide 2-4-D to destroy illegal coca plantations in Chapare and Yapacani, in the northern area of Santa Cruz Department.

However, Chapare farmers have charged that those who are handling the herbicides are not experts and that, consequently, incorrect use of chemical products could cause the land to become unfit for production.

The College of Agronomists of Bolivia has taken interest in the subject. It asked that a technical commission be created to investigate these charges. The commission, according to that organization, should be made up of experts of the Ministry of Agriculture and the College of Agronomists. In the meantime, the organization has requested the Ministry of Agriculture to suspend the use of herbicides.

### Academy of Sciences

The Academy of Sciences of Bolivia, for its part, has expressed in La Paz its concern about the use of herbicides and their possible effects on the yield of agricultural production.

In a letter to the minister of agriculture and campesino affairs, the academy states: "The National Academy of Sciences of Bolivia is concerned about the possible effects, now not well known or studied, of the chemicals that are being applied, and especially those phenomena that could affect, at short or long term, the ecology of the contaminated regions."

The Academy of Science of Bolivia adds: "It is our basic purpose to see to it that organizations with expertise in the field of agriculture and plant pathology conduct a rigorous study and have control over the use of

these products, making sure that their harmful effects can be quickly dissipated without greater dangers."

The academy also asks that the composition of the herbicide used be disclosed to help technical institutions make a statement on the subject.

#### Chapare Farmers Concerned

La Paz PRESENCIA in Spanish 13 May 82 p 9

[Text] Cochabamba, 12 May--Chapare farmers will ask the government to ban the use of toxic herbicides in that area, as a measure for the preservation of species and because of the danger it represents for agriculture.

The secretary general of the Federation of Chapare Agricultural Workers, Manuel Sanchez, told the press that a memorandum to that effect has been sent to the Prefecture.

Several technical entities, said Sanchez, have made statements in this connection and "we even have the backing of the archbishop, Monsignor Prata," who later was backed by a group of clerics and experts who participated in a symposium on ecology.

According to agricultural leaders of Chapare, the use of toxic herbicides is dangerous for agriculture and even for people, because of the obvious residual effects of their components. This concern was expressed to the prefect so that he in turn may make it known to the Ministry of Agriculture and Campesino Affairs.

#### The Presentation

The agricultural leaders said that some time ago they presented the position of the Chapare farmers to the U.S. Ambassador, and demanded payment of \$100,000 per hectare of land occupied by coca plantations. Only when this payment is made will the destruction of the coca plantations be allowed.

It was pointed out that in spite of alleged clarifications by government authorities and specialized organizations, 2-4-D herbicide is dangerous to the land, making it useless for other crops.

Agricultural leaders said that farmers will be harmed by the use of these herbicides, while the United States is not giving absolutely any cooperation, which they called "clear injustice."

In addition, a group of priests and clerics expressed their public support to the position taken by Archbishop Monsignor Prata against the use of this herbicide.

The statement is signed by approximately 20 clerics. It states: "We fully support Monsignor Prata, our archbishop, when he says, speaking of the use of herbicides, that we are trying to defend the greatest of human rights, the

right to life, and that if the United States or any other country wants to protect itself from the scourge of drugs, they can do so without attacking the rights of another country, and that the struggle against drug traffic is to be carried out without affecting the rights of the people."

#### PRODENA Calls for Stop of Herbicide Use

La Paz PRESENCIA in Spanish 6 May 82 p 10

[Text] The Bolivian Association for the Protection of Nature (PRODENA-Bolivia), a nonprofit public organization, yesterday asked the government to abandon the use of herbicides in the destruction of coca plantations, because of "serious repercussions that this will have on our ecology, our settlers and the fauna and flora of the region."

The National Council of the Fight Against Drug Trafficking is in charge of the program of reducing coca plantations in the north of Santa Cruz Department. It has used herbicide 2-4-D often to eliminate grass from Santa Cruz cane fields, according to the council.

However, PRODENA-Bolivia has alerted the government, the communications media and public opinion about the "serious danger embodied in the use of this herbicide for survival of wildlife."

In a communique the organization points out: "The harmful action of these toxic substances inevitably has to affect the life of domestic animals and valuable fauna and flora of the region, and even implies the possibilities that experiments are made with new preparations with still unknown effects."

The Council of the Fight Against Drug Trafficking reported that they have used 2-4-D herbicide experimentally to destroy illegal cocac plantations in Yapacani, to find out whether this is more economical than manual or chemical destruction, but that the experiment has already been concluded.

At any rate, PRODENA-Bolivia requests the authorities mainly responsible for the program to "abandon this untried procedure in this plan to reduce areas of coca cultivation, because of serious effects that this may have on our ecology, our settlers and the regional fauna and flora."

#### Herbicides Banned in Chapare

Cochabamba LOS TIEMPOS in Spanish 16 May 82 p 8

[Text] The minister of agriculture and campesino affairs, Col Carlos Villarroel Navia, has officially announced that herbicides will not be used in the eradication of coca plantations in the Chapare area, but rather manual and mechanical means.

In the past few days various local officials and professional and civic organizations made statements against the use of herbicides in the extermination of coca plantations in the Chapare area, in view of negative effects of

these chemical compounds, which sterilize productive land and cause biological disorders among the inhabitants.

Cochabamba Archbishop Msgr Genaro Prata said categorically that "herbicides should not be used in the Chapare area because they constitute an attack on human rights and the right of man to work."

The department prefect, Col Guido Sandoval Zambrana, also came out against the use of herbicides pointing out that it is necessary to study new methods for the eradication of coca plantations in the Chapare area.

For their part, Chapare farmers and the departments federation pointed out that they "will not permit the use of herbicides, and said that the United States cannot conduct more experiments in the country."

Minister of Agriculture and Campesino Affairs Col Carlos Villarroel Navia, understanding this situation and the many statements of opposition to the use of herbicides, came to an acceptable conclusion.

11635

CSO: 5000/2123

BRIEFS

SOIL CONSERVATION--Some residents of Challengers Village on Wednesday night presented a Card of Thanks to the Premier, Hon. Dr. Kennedy Simmonds. The "THANK YOU" Card contained the signatures of a cross-section of people living in the Village, which is situated some four miles out of Basseterre. This expression of gratitude was made in recognition of the recently-completed work of Upgrading and Soil Conservation carried out in Challengers by the Public Works Department. Every Alley-way in the Village was graded and paved for the first time ever, halting a serious problem of soil erosion, on the hillside of the Village. The Presentation was organised by the Challengers Constituency Group of the People's Action Movement who invited the Premier to Challengers Village for the purpose. The residents took the opportunity to clarify a number of important national issues and to offer Premier Simmonds and his Government encouragement and support in their ongoing Administration. [Excerpt] [Basseterre THE DEMOCRAT in English 22 May 82 p 1]

CSO: 5000/7548

## AFFORESTATION ENDEAVOUR IN ERITREA HIGHLY ENCOURAGING

Addis Ababa THE ETHIOPIAN HERALD in English 6 Jun 82 pp 1, 4

[Text] ADDIS ABABA (ENA) — Over 11,000,000 tree seedlings have been prepared for a large-scale afforestation drive to get underway in Eritrea region within the framework of the Red Star Multi-faceted Revolutionary Development Campaign.

In a statement issued here yesterday, the Wildlife and Forest Conservation and Development Authority said, the campaign is to be carried out under the joint auspices of the Forest Development Department of the Authority and the Regional State Forests and Community Forest Development Department. It was noted that the peasants of Eritrea region are currently engaged in planting tree seedlings in their respective localities by applying the training given them by the Authority area office.

Noting that most of the region has been heavily denuded and suffered from the consequences of natural and man-made calamities, the statement

pointed out that in the effort underway especially in Akele-Guzai and Hamassien provinces to restore greenery, an aggregate of 4,370 kms of terrace dams has been constructed over 1,043 hectares of land.

In Keren, Seraye and Keiy Bahir provinces, three modern nurseries have been launched to assist the afforestation campaign and educational seminars augmented by illustrated pamphlets and posters are currently being given by a mobile team to the peasants with a view to implement the Authority's Programme of Forest Conservation in the region.

The afforestation endeavour like any other area of rehabilitation activity in the region is highly encouraging and exemplary, the statement concluded.

CSO: 5000/5766

## BRIEFS

AFFORESTATION LAUNCHED IN BALE--GOBA (ENA)--An afforestation campaign to plant 2,900,000 tree seedlings prepared at eight nurseries has been launched in Bale region, according to the area office of the Forestry and Wild Life Conservation and Development Authority. Of the total upwards of 700,000 seedlings were planted during the first phase of the afforestation programme in April by employees of the authority and members of the peasantry in line with the afforestation programme for this Ethiopian calendar year. Other participants in the afforestation programme include workers of the soil and water conservation authority, students and kebele associations. The afforestation programme is aimed at covering barren hills and deforested areas as well as villages with trees useful for industrial woodwork production, the area office of the authority said. [Text] [Addis Ababa THE ETHIOPIAN HERALD in English 29 May 82 p 3]

CSO: 5000/5766



## EROSION THREATENS ONE HUNDRED MILLION DOLLAR HOTEL INVESTMENT

Monrovia DAILY OBSERVER in English 11 Jun 82 pp 1, 10

[Text]

**The main pipeline supplying water to Hotel Africa and the surrounding 50-villa "OAU Village" has been burst by a bombardment of sea water, leaving the area without water for the past three days.**

But technicians of the Liberia Water and Sewer Corp. (LWSC) have been working around the clock to restore water to the area.

The latest incursion by the rapidly encroaching sea water brings into sharper focus the persistent erosion which is daily eating away the earth around the area, seriously threatening the estimated \$100M investment there.

Experts from the Ministries of Lands, Mines and Energy, Public Works and Rural Development have described the beach erosion in the area as "grave indeed", and have stressed urgent need for the allocation of funds to reclaim the land in the vicinity and avert the imminent danger facing the infrastructure there.

The most seriously threatened villa, No. 13, is now just about 15 yards away from the ocean. Light poles installed in the area in 1976 for the 1979 Summit Conference of the Organization of African Unity as well as trees which once helped to beautify the landscape have all been engulfed by the ocean. Some residents in the area say the erosion rate is as high as three feet per day.

But this may be an exaggeration. According to a report on the subject

by a technical committee comprising experts from the Ministries of Lands, Mines and Energy, Public Works and Rural Development, (formerly Action for Development and Progress), "the rate of recession of the beach inland is in the neighborhood of ten feet per annum" — a velocity described as "rather rapid" by the committee.

The committee was set up in October of last year, having realized the gravity of the situation at Hotel Africa, to study the problem and recommend possible solutions.

After a seminar on the subject conducted by the committee on October 16, 1981, a number of short-term and long-term solutions were proposed.

#### **'Temporary Solution'**

For example, the Ministry of Public Works which has come up with the most reliable temporary solution thus far, proposed that about \$2.2 million would be required, excluding contingency allocations, to undertake boulder dumping in the area for 125 working days.

The proposal projected that some 100 thousand cubic yards of dump

material (boulder) and 40 thousand cubic yards of clay would be needed.

The Ministry of Rural Development also offered three alternative suggestions, including the use of curved face wall (\$2.7 million), stone revetment (\$0.98 million) and bulkheads (\$1.8 million). It is obvious, the Ministry said, that the use of stone revetment would be a better choice owing to the economic factor.

But it cautioned that any choice of the alternatives should depend and reflect upon time limitations, availability of materials, equipment and general technical expertise.

The Committee report also noted the inavailability of such organization in the country as would be charged with the responsibility of combating and reducing those activities which may serve to threaten the human environment in Liberia. For this reason the Technical Committee proposed the establishment of the

Liberian Beach Erosion Board (LIBEB) to cater to this problem.

Regarding the short-term proposal by the Ministry of Public Works, the National Investment Commission (NIC), which was also involved in the technical discussion owing to its connection with the investment at Hotel Africa, was to explore the possibility of an advance payment of the \$2.2 million by the management of Hotel Africa, in order to have the work commenced.

But according to reliable sources at NIC, the hotel management and its parent company, FINOMA, claim not to be able to afford such an advance payment at this time. NIC had intended to get Public Works to do the job, and FINOMA to defray the expenses, against revenue which the hotel management would pay to Government on rental and gambling fees in the future.

Thus the next alternative, NIC disclosed, was to contact the Dutch Government which has wide experience in land reclamation, to render some assistance in stopping

the erosion. But the Daily Observer could get no word yesterday as to how far these negotiations had progressed.

However, [words illegible] Observer that the PRC Government was aware of the beach erosion at Hotel Africa and was accordingly concerned about the gravity of the problem.

The NIC spokesman said the biggest hold-up was the lack of funds to immediately solve the problem.

The Technical Committee had also recommended that the Ministries of Public Works, Lands, Mines and Energy and Rural Development should undertake the project as a joint effort immediately. But the funds, of course, need to be made available. It is also said that during the dredging of the port by the National Port Authority (now in progress), all sand removed from the

port be deposited on the beach near Hotel Africa for nourishment of the shoreline. Nothing has so far been implemented regarding this point.

However, the Committee decided that the Liberian Government should seek technical and personnel assistance from foreign countries which have experience in land reclamation, as Liberia lacked personnel trained in this type of activity.

Some of the countries suggested included West Germany, the Netherlands, Union of Soviet Socialist Republics (USSR), Japan, and such organizations as United Nations Environment Programme (UNEP) and the United States Agency for International Development (USAID).

What is certain at this point is that no implementation of any of the proposals has been made, but Government is aware that it certainly has to do something urgently about the situation in Virginia.

CSO: 5000/5768

## BRIEFS

GRAIN FOR DROUGHT VICTIMS--The Federal Government has distributed over one thousand bags of rice, millet and guinea-corn in Gumel Local Government Area of Kano State to aid drought victims. Speaking on the occasion, the Presidential Special Assistant (PSA), Kano State, Alhaji Lawal Kaita, expressed sympathy to the drought victims in the area. Alhaji Lawal Kaita said that the Federal Government does not hope for the occurrence of drought or other disasters but was always willing to offer its aids to these kind of victims. The PSA said that President Shehu Shagari, recently released 2.5 million Naira to aid drought victims in the state. He added that about 500,000 Naira was allocated to his office. He pointed out that the money was used in buying the materials now being distributed to drought victims. Alhaji Lawal Kaita then called on the Kano State Government to start efforts to aid the victims in the affected local governments. Alhaji Lawal Kaita also said that one million Naira was also set aside for the provision of agricultural tractors and implements and implored the distribution committee in the area to justify the confidence reposed in it by discharging its duty without fear or favour. He said politics should not be allowed to interfere with the distribution of items to drought victims. Earlier welcoming the PSA and his entourage, the Chairman of the Distribution Committee, Alhaji Mamman Dankakale, said that about bags of rice, guinea corn and millet were disbursed to Gumel as aid to the drought affected people in the area. He, however, urged the PSA to communicate to President Shehu Shagari the problems encountered by people of Gumel Emirate in securing drinking water and animal feeds in the area. [Adekunle Oyebanji]

[Kaduna NEW NIGERIAN in English 18 May 82 p 16]

CSO: 5000/5763

NATION'S MOST CRITICAL ENVIRONMENTAL PROBLEMS EXAMINED

Johannesburg THE STAR in English 5 Jun 82 p 5

[Article by Rob Soutter]

[Text]

**Today is World Environment Day — a time when everybody concerned for the quality of life should look carefully at his surroundings and consider their future. Today The Star looks at one of the most critical environmental problems facing both South Africa and the Third World. This country is facing a ticking time bomb in the depressed homelands as overcrowding, malnutrition, overgrazing and soil**

**erosion threaten to devastate rural areas, and overwhelm the cities with starving refugees. These pictures show how fertile agricultural land is being destroyed as the problems are ignored. The land will be sorely missed in 20 years as farmers struggle to feed a more than doubled population. An expert on the rural crisis, Professor John Hanks, talks to CARE reporter Rob Soutter.**

South Africa cannot afford to ignore the worsening crisis in its rural areas, because the consequences are spreading to the cities with increasing crime, vagrancy and social tension.

"Influx control is no answer. The problems must be solved at their source — in the overpopulated, chronically degraded homelands," said Professor John Hanks, director of the University of Natal's Institute of Natural Resources, in an interview in Johannesburg.

The institute was formed 1980 to research the problems and deve-

lop viable long term solutions in co-operation with the Prime Minister's Office and the KwaZulu Cabinet.

The aim is to raise the quality of living and make rural life more attractive with more job opportunities and better farming methods, so reducing the waves of discontented migrants to the cities.

"South Africa is facing disastrous consequences in both the rural and urban areas from steadily mounting unemployment, poverty and malnutrition in the homelands," said Professor Hanks.

"Combined with overcrowding and soil erosion, these factors

are creating a potentially explosive situation. It is the greatest single threat to South Africa's long-term stability."

The rural crisis could not be ignored, he said. Poverty was forcing huge migrations of unskilled workers to the cities in search of jobs to buy food for their starving families in the homelands.

"This will further aggravate the country's urban problems."

Unemployment, housing and crime in the cities were chronic problems. Squatting would increase, and the lack of employment for these unskilled rural migrants would inevi-

tably lead to more crime and social tension, said Professor Hanks.

"And without help, the crisis in the rural areas will fester and fuel further migrations of ever more desperate people. "Parts of South Africa are already mirroring some of the more desperate Third World situations."

The institute is concentrating its efforts in kwaZulu, one of South Africa's most degraded rural areas, and it is hoped the solutions can be applied in other underdeveloped regions of southern Africa.

"This could have tremendous social economic and environmental benefits for the sub-continent," said Professor Hanks.

Problems in kwaZulu include:

- Overcrowding of people and domestic stock in limited land areas which are continually fragmented. Consequent overgrazing leads to soil erosion and the loss of millions of tons of irreplaceable fertile soil washed into the sea.

- Energy demands of the steadily increasing human popula-

tion are outstripping the growth of new trees, leaving huge areas barren.

- Animal dung is being used as fuel, due to the shortage of wood, further impoverishing the soil and causing erosion.

- "Industrialisation is only part of the answer to unemployment in these areas," said Professor Hanks. "More than 1500 jobs would need to be created every working day — an impossible task for any government."

In kwaZulu, 30 indus-

trial undertakings created employment for 2500 people at a cost of R63-million — more than R25 000 a job.

"No matter what political changes are made in kwaZulu in the future, the rural areas will not disappear," he said.

"The answer lies in the upliftment of the rural areas, with expanded job opportunities, better living conditions and something to believe in, and work for."

## Bid to Save Rural Areas From Collapse

An intensive rural upliftment programme — the first of its kind in South Africa — has been launched in kwaZulu to help solve the deteriorating situation there.

The scheme undertaken by the University of Natal's Institute of Natural Resources will study and initiate alternative land utilisation methods to improve the quality of rural life.

It is the second phase of a five-part programme, and will focus research on an area of kwaZulu which is representative of the whole region.

However, the institute needs more money to initiate more projects in kwaZulu.

The aim is to choose the best land use for each area and soil type to boost food produc-

tion and create more jobs.

A vital consideration is that the land use must be sustainable in the long-term. Areas in danger of ecological collapse will be reclaimed.

"Subsistence farming as practised in the homelands and surrounding states cannot be sustained in the face of ever-increasing overcrowding, overgrazing and soil erosion," said Professor John Hanks, the institute's director.

Agricultural potential of the land would be drastically diminished without swift action, at a time when more and more food had to be produced to feed a rapidly increasing population, he said.

"The Government has stated that the institute's activities are of national interest," he said. "Positive results could have tremendous benefits for other underdeveloped areas of the sub-continent."

Experimental projects are being launched to improve water supplies and introduce intensive small-scale irrigation farming which will be tested for viability and acceptance by the local population.

The key to the programme, said Professor Hanks, is that it has the support of the kwaZulu authorities and the co-operation of the local inhabitants.

All funding comes from the private sector, including R320 000 for the entire upliftment programme from the Anglo American and De Beers Chairmen's Fund.

"The urgency of our work is dictated by the rapidly deteriorating rural situation," said Professor Hanks stressing the need for more funds.

More information about the institute's work can be obtained by telephoning Mary Rose at Johannesburg 36-2811 or the institute at Maritzburg 0331 63320 extension 445.

FAILURE OF 'OPERATION CATTLE RESCUE' DEPLORED

Harare THE HERALD in English 3 Jun 82 pp 1, 3

[Article by Chemist Mafuba]

[Text]

IT is now inevitable that "Operation Cattle Rescue" will fall "far short" of its intended capacity because of the poor response at communal pen sales, says the chairman of the Cattle Producers' Association, Mr Keith Harvey.

Presenting his report to the CPA Congress, Mr Harvey said it had been anticipated that some 30 000 to 40 000 head would have to be processed monthly, with a total take-off in excess of 200 000.

"So far this year the Cold Storage Commission has bought less than 38 000, even though their buyers have been prepared to take all classes of stock, including rejects," he told the delegates.

"It is now inevitable that the rescue exercise will fall far short of its planned capacity, even if the communal stock owners reverse their present resistance to the sales.

"It is, unfortunately, also equally inevitable that before the onset of the next rainy season thousands of their cattle will be dead."

The Government provided \$25 million to finance the cattle rescue operation. This was in addition to \$10 million for the normal finance and breeder schemes.

Although production trends in the beef industry were relatively slow because of its long-term nature, Mr Harvey reported that by the end of last year there was

considerable evidence to indicate that a positive recovery was taking place.

In a total CSC kill of 350 000, only 117 505 were females as against 184 850 in 1980.

Statistical evidence showed that the commercial breeding herd had increased by 5 percent to 769 211 and a further and larger increase appeared likely in the present bulding season, he said.

"It was, therefore, predictable that this year would be another year of depressed slaughterings, but that subsequent years would see progressive gains in all phases of production." However, "the drought has put paid to these hopes", he said.

The northern cropping regions, which experienced late summer rains, should be capable of taking in large numbers of drought-stricken cattle.

The CSC feedlot complexes, which had been on a care and maintenance basis at Wills Grove and Kadoma, accommodated 60 000 head at short notice.

Provision was being made to establish another feedlot at Chinhoyi to have close access to large supplies of crop residues.

Mr Harvey said the CSC had been flooded with slaughter bookings since the under-supply position which existed in December and January.

"Up to last month (May) nearly 200 000 had been handled and a similar number booked from this month (June) to October."

To cope with disposal

sales, the CSC general manager, Mr Don Colleen is overseas seeking markets.

Mr Harvey said producers were anxiously waiting for the Commission of Inquiry to present its report to Government, and it was being anticipated that there would be no further delay.

Of the producer-price schedule, he said: "Undoubtedly minor and perhaps major adjustments will have to be made from time to time to correct genuine anomalies or meet changing circumstances.

"I am sincerely convinced that the incentive elements in the new schedule will achieve a very positive response in terms of production and growth."

Mr Harvey said the commercial farmer was "completely aware and very sympathetic" to the Government's problems over land redistribution.

"Nevertheless, it is vitally important that those farms not involved in resettlement programmes be used to their full productive potential.

"This can only be achieved in the absence of any form of harassment and under conditions where the sanctity of life and property are assured.

"Given those circumstances, there will be no doubts of the complete commitment of all our farmers to the future wellbeing and prosperity of our country, Zimbabwe."

The congress was told that the Veterinary Services Department was functioning satisfactorily in most areas by the department's acting director, Dr Bob McKenzie.

Two-hundred dip tanks

out of a total 1700 were not operating.

Contractors had completed six new dip tanks and 10 more were under construction, while a further 100 would be built between July this year and June next.

"In some areas cattle owners have willingly supplied their labour and the department has supplied materials to reconstruct tanks which were not functional," he said.

It was anticipated that the dipping service would become more efficient, and tick-borne diseases

would be adequately controlled, provided the necessary equipment and staff were made available.

A new system of persuading farmers to appreciate the value of disease control had been introduced.

While outbreaks of foot-and-mouth disease had been brought under control, Dr McKenzie warned that vigilance was needed as there could be no guarantee of separation between cattle and the game animals which carried the disease.

Funds were being made available by the European Economic Community to launch a vaccination campaign. The programme brought EEC approval for beef exports to community countries.

Dr McKenzie said a Government official was in Brussels talking to EEC representatives on the matter.

Regrettably, he said, numerous human deaths caused by anthrax had been reported in addition to hundreds of cases detected early enough to respond to treatment.

"It must now be accepted that anthrax is present throughout the

country," he said. "A continuing threat, especially to cattle, will exist for many years."

Fortunately for Zimbabwe, an effective vaccine against the disease was available.

"Every stock owner is advised to ensure that his cattle are vaccinated every nine months to protect them against this disease."

Twenty-seven people died this year of rabies, the highest recorded in any one year, he said.

Last year 265 600 dogs were vaccinated, but this was considerably below the annual average of 330 000 dogs vaccinated between 1970 and 1975.

"It is to be hoped that with an improvement in the security situation the department will be able to obtain satisfactory nationwide vaccination cover in the dog population," he said.

On tsetse fly and trypanosomiasis control, he said this year priority would be given to the "serious situation" in Gokwe where flies from the Chirisa Safari Area are threatening to re-invade southwards into the Lupane District, and eastwards into the Copper Queer and Chenjiri small-scale commercial farming areas.

At the same time the Urungwe communal area, Vuti and Karoi farming areas would be protected by a band of ground-spraying staff.

Spraying teams in the Chipuriro District would tackle the invasion through the drainage system by flies which is now threatening the Umvukwes and Raffingora farming areas.

## AGRITEK SPECIALIST BLAMES MISMANAGED SYSTEMS INSTEAD OF DROUGHT

Harare THE HERALD in English 4 Jun 82 p 12

[Text]

SOME livestock producers moaning about drought have only themselves to blame for mismanaging their ranches, says the chief veld and pasture Agritex specialist, Dr Mick Gammon.

With sound management, he argues, Zimbabwe could do without drought relief measures which had contributed to livestock congestion in the past.

He has compiled a comprehensive data on previous droughts and produced a paper entitled The Importance of Grazing Management Especially in Dry Years which he presented at the winter beef symposium.

"The well-intentioned past drought relief measures had fostered excessive stock numbers, accentuating the drought damage.

"With sensible stocking rates and good veld management there should be no need for drought relief, except after an extremely poor year.

"It is surely opportune now to institute a logical system of controlling numbers."

While the need for drought relief is not denied, Dr Gammon says care is needed to ensure that measures do not promote veld deterioration.

There is a clamour for restocking areas which are being destocked, but consideration ought to be given to restocking rates as most of the areas that are being destocked were seriously congested.

Putting his case for good management, Dr

Gammon says in past droughts farmers with moderate stocking rates and good veld management had been unaffected.

It is idle talk to say the veld is in poor condition because of lack of rainfall, he says. While field harvest had been affected, the overall veld condition (species composition, basal cover etc) was still intact.

Dr Gammon admits that a series of dry years can adversely affect veld condition, but in the present case there has almost been a decade of good rainfall years.

"The poor condition is a result of many years of mismanagement," he says. "Some veld is in such poor condition that in effect it suffers drought every year regardless of rainfall."

In a subsequent season of normal rainfall, damage can be just as great if increased stocking rates are re-imposed too soon before the veld has fully recovered.

Dr Gammon takes to task unscrupulous speculators who overstock leased ranches hoping to get profits in a short time but having little concern for the long-term effects on the resources they are misusing.

Dr Gammon reminds producers:

- Heavy stocking rates lead to a fall in veld condition, profits and output per hectare

- Gross margin per hectare reaches a maximum at lighter stocking rate.



## BRIEFS

WATER PLAN FOR MUTOKO--The Government is spending almost \$1 million on the construction of a water-works scheme for the Mutoko growth point. A statement from the Ministry of Water Resources and Development yesterday said that the water would be used to supply the Mutoko growth point and to provide irrigation for 100 ha in the Mutoko communal area. A dam will be built on the Nyadire river, 17 km west of the growth point, and will have a maximum capacity of three million cubic metres and a height of 9 metres. Water is now drawn from three dams on the Mudzi river and for the past six years, water has been rationed because the dams cannot cope with demand. [Text] [Harare THE HERALD in English 2 Jun 82 p 4]

EEC DROUGHT AID--BRUSSELS--The European Economic Community has granted 1-million dollars (R1,08-million) in special aid to Zimbabwe to help fight a severe drought that has wiped out 46 percent of the country's food production. An EEC Commission spokesman said the drought was "without precedent" and had affected 1,5-million people. The EEC aid will cover the costs of distributing maize and buying water pumps. As a result of the continuing dry weather in Zimbabwe, the spokesman said, "basic food production ... is 46 percent below the level of the previous year." [Text] [Johannesburg THE CITIZEN in English 9 Jun 82 p 12]

DROUGHT AID FOR HWANGE--The distribution of drought relief food started in the Hwange comunal area yesterday with the arrival of 80 bags of maize for five centres in Ward 1, the district administrator, Mr Morgan Chahwahwa said. Because demand had exceeded supplies, rations had been adjusted to satisfy as many people as possible. Many people had thanked Government. Those who had received nothing accepted the situation and looked forward to their turn when more food arrived, he said. [Harare THE HERALD in English 3 Jun 82 p 3]

DROUGHT RELIEF MONTH--Church leaders have declared July as Drought Relief Month to raise aid for people in stricken areas. The decision was taken at a meeting this week, the chairman of the heads of denominations and Anglican Bishop of Mashonaland, the Rt Rev Peter Hatendi, said yesterday. All churches were called upon to tell their congregations about the plight of the people in drought-hit areas during July. All efforts during the month would lead to a National Drought Relief Day on August 1. The public has been asked to give freely in cash or kind. Bishop Hatendi said gifts could be channelled through individual churches or be sent to Christian Care at PO Box 33, Harare. The

churches and Christian Care were hoping to complement the efforts that were already being undertaken by the Government to help drought-stricken families. The European Economic Community has approved a further \$800 000 of emergency aid for drought relief. The latest allocation is in addition to the EEC's national aid programme for Zimbabwe which amounts to about \$28 million. Of the new funds some \$220 000 will be used for water extraction from dried up river beds through the District Development Fund and the Ministry of Water Resources and Development. [Text] [Harare THE HERALD in English 4 Jun 82 p 11]

SMALL DAMS DRYING UP--Small dams in Matabeleland communal areas are drying up fast, but the situation could be saved if the region received early rains, said a spokesman for the Chief Hydrological Engineer's Office in Harare yesterday. The spokesman said major national dams had plenty of water to last for some time and the Lowveld irrigation complex's supply from Kyle Dam could last up to 2-1/2 years. Evaporation would not have much effect on the Middle Sabi and Chisumbanje areas, as their supply dams were situated in cooler Manicaland areas. [Text] [Harare THE HERALD in English 4 Jun 82 p 11]

CSO: 4000/5762

## NOVIKOV ON ENVIRONMENTAL CONSERVATION

PM111259 Moscow PRAVDA in Russian 5 Jun 82 p 3

[Article by I. Novikov, deputy chairman of the USSR Council of Ministers and chairman of the USSR Council of Ministers Presidium Commission for Environmental Conservation and the Rational Use of Natural Resources: "The Earth Is Our Home; Today Is World Environmental Conservation Day"]

[Text] The Communist Party and Soviet state have at all stages, since Lenin's decrees on nature conservation, displayed concern for the rational use and reproduction of natural resources and the safeguarding of the opportunity to use them for the present and future generations of Soviet people.

The conservation of the environment and the rational use of natural resources is one of the most topical global problems of the present day. Its solution is inextricably linked with the struggle for peace on our planet, for the prevention of nuclear war and for disarmament. The specific proposals put forward by Comrade L.I. Brezhnev in his speeches at the 17th Trade Unions Congress, the festivities in Tashkent and the 19th Komsomol Congress are a graphic new testimony to the tireless efforts of the Communist Party and Soviet state aimed at reducing the level of military antagonism and developing cooperation between all states. Comrade L.I. Brezhnev also spoke of the need to preserve peace in order to implement our creative plans in his report at the CPSU Central Committee May (1982) plenum.

The realism of Soviet foreign policy directed toward the common sense of people of good will is meeting with increasing support among the world's peoples. At the USSR's initiative, the 31st UN General Assembly session approved the convention on the prohibition of the military or other hostile use of means of modifying the environment while the 35th UN General Assembly session approved 'a resolution on states' historical responsibility for preserving the earth's natural environment for the present and future generations. Our country takes an active part in international cooperation on questions of nature conservation within the framework of the UN Environmental Program (UNEP), CEMA, and other organizations. In May a Soviet delegation took part in the work of UNEP's jubilee session in Nairobi (Kenya).

Using the advantages of the socialist system, the USSR is purposefully implementing a wide range of measures to ensure the rational use of natural resources and environmental conservation.

A completely different ecological policy is pursued in the capitalist countries where man and nature are the subjects of merciless exploitation. This policy defends the interests of the monopolies. Constantly building up its military budget, in recent years the White House has been cutting back on expenditure on environmental conservation and irrationally spending natural resources on the unrestrained arms race. The militarization of the economies of the United States and its NATO partners, their production, testing and stockpiling of large quantities of nuclear, chemical, radiological and bacteriological weapons of mass destruction and discharge of radioactive and toxic waste into the world's oceans are having a pernicious effect on the environment.

In our country the policy of a solicitous attitude toward the environment which is being pursued is enshrined in the USSR Constitution, the party congress' decisions, and the legislative acts and resolutions of the CPSU Central Committee and USSR Council of Ministers.

With a view to further improving the administration of nature conservation in the country and stepping up the monitoring of the fulfillment of party and government decisions on these questions, the USSR Council of Ministers Presidium Commission for Environmental Conservation and the Rational Use of Natural Resources was formed in 1981. This commission is also charged with implementing a unified scientific and technical policy in the sphere of the use of nature, examining major problems of transforming the country's natural environment and questions of observing ecological requirements in planning, constructing and modernizing enterprises, reclamation and hydraulic systems, and transport and other establishments.

The scope of the nature conservation work we perform is enormous. A state system for observing and monitoring environmental pollution has been created and is functioning, covering over 450 cities, about 1,900 inland bodies of water all inland and contiguous zone [okrainnyye] seas and also the soils of regions where agricultural and forestry chemicalization means are employed. The planning of nature conservation measures at all levels is effected.

In 1976 through 1980 some R9.3 billion of state capital investments were spent on these goals. As a result of the measures taken, the discharge of harmful substances into the air of cities and industrial centers was reduced by 13 percent, while atmospheric pollution with dust, sulfur dioxide, and hydrogen sulfide was stabilized or somewhat reduced in 70 percent of monitored cities. The volume of recycled water supplies in industry is increasing. On average it has reached 64 percent of all water consumption. The discharge of untreated sewage, given the increased stringency of requirements regarding the degree of its treatment, was reduced by 20 percent. The allocation of land for nonagricultural needs was halved. A large amount of nature conservation work is underway in our motherland's capital, Moscow. Moscow has the purest air and bodies of water among the world's major cities.

Nature conservation measures produce a substantial economic and social effect. Air and water become purer, the number of wild animals and birds increases, and landscapes are changed for the better. All this creates favorable conditions for Soviet people's leisure.

In the 11th 5-Year Plan it is planned to channel R10.3 billion into nature conservation -- 11 percent more than in the previous 5-year plan. The ministries and departments must increase the effectiveness of the use of capital investments earmarked for these purposes, and ensure the timely commissioning of nature conservation projects.

In 1981 the plan for capital investments in nature conservation was fulfilled for the country as a whole. However, the leaders of some enterprises and organizations are failing to ensure the fulfillment of nature conservation measures and as a result the ecological situation in individual cities and industrial centers is still being improved only slowly. The main stationary source of air pollution is still the enterprises of the USSR Ministry of Power and Electrification, the USSR Ministry of Ferrous Metallurgy, the USSR Ministry of Nonferrous Metallurgy, the USSR Ministry of the Petroleum Refining and Petrochemical Industry, the USSR Ministry of Construction Materials Industry, the USSR Ministry of the Timber and Pulp and Paper and Wood Processing Industry, the Ministry of the Chemical Industry, the Ministry of Mineral Fertilizer Production, and the Ministry of the Petroleum Industry which produce about 85 percent of the total discharge of harmful substances into the atmosphere.

In waste gases, it is mainly the solids which are trapped. Harmful gaseous and liquid substances are not being rendered totally harmless.

The Ministry of Machine Building for the Chemical Industry must produce more equipment for these purposes. Frequently the gas purifying and dust trapping devices are operated ineffectually. Some enterprises allow gross discharges of harmful waste to occur as a result of breakdowns. Automobiles pollute the air in cities considerably. Not all water purification installations are equipped with modern water gauges and control instruments. The Ministry of Instrument Making, Automation Equipment and Control Systems and the Ministry of the Chemical Industry must increase the output of facilities for improving the quality of sewage treatment.

The mining enterprises are only slowly recultivating the land they have disturbed. The Soyuzselkhozkhimiya organizations do not always observe the rules for storing, transporting and using pesticides. The ministries and departments which are their clients and sub-contractors (the USSR Ministry for the Construction of Heavy Industry Enterprises, the USSR Ministry of the Construction Materials Industry, the USSR Ministry of the Construction Industry and others) in a number of cases fail to ensure the timely fulfillment of targets for the commissioning of nature conservation projects.

These shortcomings must be rapidly eliminated. This will make it possible, without enlisting additional funds, to improve the state of the air and bodies of water in many cities and industrial centers.

One very important component of the biosphere is forestation. Our country's enormous tracts of greenery are a priceless national asset. It is essential to use this resource zealously, to ensure the reproduction of the forest, to reduce timber losses during its processing, to expand protective forestation and to step up forest conservation.

There are 137 state sanctuaries and hunting reserves, 7 national parks and a large number of republic and local game reserves in operation in our country. In the 11th 5-Year Plan the formation of a scientifically substantiated network of reserve territories and national parks will be continued. Much is being done to ensure a balanced increase in the number of wild animals and the reproduction of valuable types of fish. The struggle against poaching is being stepped up. The controlling organs must step up the struggle against violations of nature conservation legislation. The local soviets of people's deputies and the public are called on to take a more active part in nature conservation.

The main strategic salient of nature conservation work is the introduction of low-waste or, where possible, waste-free manufacturing processes which make it possible to reduce or completely eliminate environmental pollution, to ensure the in-depth comprehensive processing of primary raw material and waste from industrial enterprises, and to obtain additional output. The potential for this exists in virtually all industrial sectors. Much is already being done. However, it is not enough. Because of the incomplete processing of raw material at some enterprises a large quantity of valuable substances go to waste. The opportunities for utilizing useful components of industrial waste are not used everywhere.

The subject matter relating to environmental conservation and the rational use of natural resources included in research plans is still only poorly geared toward the creation of progressive production processes and not enough scientists from academic institutions or specialists from many sectorial scientific research, planning and design organizations are taking part in their development. In a number of cases the experimental industrial verification of innovations is delayed for many years. Questions of ensuring the comprehensive processing of raw material which are of a multisectorial nature are resolved only with particular difficulty.

When constructing and modernizing enterprises, some ministries fail to provide for the incorporation of [progressive] production processes that have been developed and instead channel funds into the erection of expensive purification installations.

The industrial ministries must concern themselves in greater depth with the problems of introducing low-waste and waste-free production processes, water recycling systems, and the comprehensive processing of raw material and production waste.

The USSR Gosplan, the USSR State Committee for Science and Technology and the USSR Academy of Sciences are called on to render all-round aid to the ministries in resolving these problems.

Important significance attaches to the propaganda and dissemination of nature conservation knowledge. Over the past decade over 3,500 publications in a total of over 44 million copies have been printed on this subject and about 100 films have been shot. Last year alone the lecturers of the all-union Znaniye Society read over 450,000 lectures on these questions. The All-Russian Nature Conservation Society alone has 34 million members.

Propaganda and explanatory and educational work in the nature conservation sphere must be improved still further and we must seek to ensure that as many Soviet people as possible take part in this noble work with a knowledge of the matter. The conservation of nature's beauty and the augmentation of its resources are each person's high civic duty.

CSO: 5000/2126

# FOREIGN, DOMESTIC ENVIRONMENTAL CONTROL VIEWED

LD041658 Moscow TASS in English 1556 GMT 4 Jun 82

[Text] Moscow, 4 Jun, TASS -- The Soviet Union regards protection of environment as one of the major social and economic problems in which the peoples of the whole world have a vital stake. This was said at a press conference today by chairman of the USSR State Committee for Hydrometeorology and Environmental Monitoring [control], Yuriy Izrael. The press conference was organized in connection with the world day of environmental protection marked in the country.

The scientist recalled that the Soviet Union has a ramified national system of environmental monitoring. It consists of a network of stations in 450 cities. At present automated stationary and mobile stations for controlling the purity of air and water are being developed.

The scientist noted that research activities are under way in the USSR to develop measures to control wastes, floods, mud flows, avalanches and earthquakes. Recycling technologies are being intensively developed and introduced.

The USSR state legislature [as received] now includes norms for maximum permissible concentrations for the main chemicals discharged into the atmosphere by enterprises, automobiles and electric power stations. Unfortunately, he recalled, these norms are more lax in other countries and that is why, for instance, there comes each year from the West to the territory of the USSR about 5 million tons of sulphur dioxide which has an unfavourable effect both on nature and man.

The scientist considers that the only realistic way of resolving the complex problems of environmental protection on the global and regional scale is a close and comprehensive international cooperation. The USSR cooperates most broadly and actively with the CEMA countries. Izrael reported that bilateral cooperation was practised with capitalist countries, for instance with France on atmospheric air protection, with Sweden, Denmark and Finland. Talks are under way with Iran and Turkey. The USSR is cooperating with the USA within the framework of 41 joint projects. "However, of late, the American side is curtailing the programmes of Soviet-American cooperation in the field of environmental protection, which is a matter of regret for Soviet specialists since both countries have been repeatedly convinced of the need and fruitfulness of the cooperation," Izrael pointed out.

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BSSR SPECIES PROTECTION BOOK PUBLISHED

Minsk SOVETSKAYA BELORUSSIYA in Russian 4 Feb 82 p 3

[Article by A. Kurskov: "Thought for the Future"]

[Text] The "Krasnaya kniga Belorusskoy SSR" (Red Book of the Belorussian SSR) has been published. The editorial board turned to the scientific secretary of the Institute of Zoology of the BSSR Academy of Sciences, Candidate of Biological Sciences, Aleksandr Nikitich Kurskov, one of the authors of this book to comment on this event.

Plants are being built faster, there are more mines, quarries, roads, fewer forests, wastelands, swamps and uninhabited places. It is becoming worse for animals and more difficult for plants. Mankind has already irreversibly lost 94 species of birds and 63 species of mammals. According to the data of the International Union of Environmental Protection and Natural Resources (MSOP) throughout the world there are still about 600 species of wild animals and birds which are threatened with extinction.

The party and government of our country since the first years of existence of the Soviet state have focused a lot of attention on environmental protection, including the animal and plant world. In the first Soviet legislative acts, statutes were formulated on organizing preserves and sanctuaries. Many species of mammals that were rare in those times were taken under state protection. Because of the timely measures, the population was restored of the saygak, moose, river beaver, sea otter, sable and many other valuable animals which were on the verge of extinction. The Soviet Union has prepared and signed a number of international agreements and conventions aimed at preserving the animal world, including preservation of the white bear, banning catching of dolphins in the Black Sea Basin.

Of great importance for preserving the fauna and flora are the 120 state preserves set up in different geographic zones of our country. Fundamentals of the Soviet Union and the union republics have been formulated and approved for questions of land, water and forestry legislation. A decree was issued in 1972 of the CPSU Central Committee and the USSR Council of Ministers "Strengthening Environmental Protection and Improving the Use of Natural Resources." Ideas of a prudent attitude towards nature and efficient use of its resources have



been placed in the USSR constitution. The Basic Directions for Economic and Social Development of the USSR for 1981-1985 and for the period to 1990 are a new manifestation of the concern of the party and government for environmental protection.

In 1978, the "Red Book of the Soviet Union" was published. In June 1979, the BSSR Council of Ministers adopted the decree "Institution of a Book of Rare Species of Animals and Plants and Those Threatened with Extinction in the Belorussian SSR," the "Red Book of the Belorussian SSR." In November 1979, the BSSR State Committee for Environmental Protection approved the list of species of animals and plants to be included into the "Red Book of the Belorussian SSR."

This state document includes 80 species of animals and 85 species of higher plants. The text of the book has been prepared by scientists of the BSSR Academy of Sciences. Detailed information is provided for each species: status, dispersal, main habitat places, population in nature, data regarding reproduction, reasons for change in population and measures taken for protection. It also includes a map of the distribution and a picture of the animals and plants.

What type of species of animals and plants are included in the "Red Book of the Belorussian SSR?" What has been taken under state protection? These are the European bison, brown bears, badgers, muskrats, forest cat and common flying squirrel, as well as rare species of bats.

Of the 286 species of birds recorded on the territory of the republic, the "Red Book of the Belorussian SSR" includes 45. These are large and small diurnal predatory birds: golden eagle, whitetailed sea eagle, zmeeyed, dwarf eagle, large podorlik, skopa, derbnik, kopchik, windhover, steppe hen-harrier, red kite, as well as nocturnal predators: eagle-owl, Stix owl, bearded neysyt' and long-tail. We should make mention of the black stork, the white heron, the grey crane, the bustard, hissing swan, and white partridge. Taking into consideration the great importance of the biological control of insect pests of gardens, forests, fields, kitchen gardens, it became necessary to protect frogs, lizards, and snakes. The rarest of them, the swamp turtle, grass-snake and cane toad have been included in the pages of this state document.

Rare and valuable species of fish (sterlet, grayling, barbel, brook trout, European cisco, sheat-fish and Vimba) have also been taken under state protection. The most important measures for protecting these fish species are protection of the spawning grounds, wintering holes, saving of the young from dried up small basins.

The most diverse and numerous group of animals, insects, is especially important: without them among the plants, conifers, ferns and moss would dominate since the majority of flowering plants are pollinated by insects. The insects are the food for many fish, birds and animals. In Belorussia, nine of the most rare and valuable species of insects from the viewpoint of science and aesthetics have been taken under state protection: deadhead, blue ribbon, black apollo and certain others.

At the suggestion of scientists, the "Red Book of the Belorussian SSR" includes the common pearl oyster, broad-fingered crab and four rare species of aquatic invertebrates which are disappearing in our reservoirs.

A lot of attention was focused on the higher plants. Eighty-five species of them have been included in the "Red Book of the Belorussian SSR." These are pasqueflower, aquatic nut, common ivy, bear's onion, forest tulip, noble Hepatica, European globe flower, white water lily, small Nuphar, dwarf birch, white fir, mountain oak and many others.

The publication of the "Red Book" is a realization of the constitution of our republic which obliges the citizens of Belorussia to conserve nature and protect its riches. This is another manifestation of the concern of the Communist Party and the government for the efficient use and protection of natural resources.

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CSO: 5000/13

USSR

## VOLCANIC CRATERS DISCOVERED UNDER LAKE BAYKAL

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 9 Dec 81 p 4

[Article: "Volcanoes under the Baykal"]

[Text] There is yet another sea under the Baykal, at a depth of 40 km. It is just as turbulent, just as deep a sea, but the winds do not blow here, rather, eddies of incandescent magma.

A modest finding on the shore of the large Ushkan'iy island was the beginning for this new geothermal model of Baykal. Among the rocks, the geologists noticed impregnations of a greenish-black color. They turned out to be augitite-rock which is usually formed during crystallization of magma.

The finding interested the scientists of the Institute of the Earth's Crust of the Siberian Department of the USSR Academy of Sciences. Deep rocks of this type contain a large quantity of iron. Therefore it was easy to determine the shape of the body they formed by a measurement of the magnetic field. Thus a crater of an ancient volcano was found under the water mass.

The geophysicists succeeded in using special probes to lower temperature gages to the bottom of the lake. They used these "thermometers" to study all of the area and to use the difference in the indicators in the lower and upper parts of the probes to determine the density of the heat flux. Based on these data, a geothermal model was constructed which confirmed that heated bodies similar to volcano craters were located under Baykal. They are located in the Selenga delta and in the region of the Ushkan'ikh islands.

The scientists developed a model of larger scale and came to the conclusion that under the entire basin of the lake at a depth of 40 km, a continuous zone of molten rock begins. Under normal conditions, these zones would be located at a depth of 120 km.

The hypothesis of the Siberian scientists is confirmed at Baykal itself. Every year the seismic instruments record up to 2,000 and more earthquakes. The strongest of them are observed in the southern and central parts, where the hot magma approaches closest to the surface.

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NEW METHOD DEVELOPED FOR PREDICTING EARTHQUAKES

Ashkhabad TURKMENSKAYA ISKRA in Russian 18 Mar 82 p 4

[Article by corresponding member of the TSSR Academy of Sciences, Professor of Geophysics and Geology, Odek Akchayevich Odekov: "Anticipate the Underground Element"]

[Text] The USSR State Committee for Inventions and Discoveries has introduced into the state register the invention of corresponding member of the TSSR Academy of Sciences, Professor of Geophysics and Geology, Odek Akchayevich Odekov "Method of Predicting Earthquakes." O. A. Odekov discusses the problems of predicting earthquakes and the essence of his invention.

About a million earthquakes of varying strength occur every year on the earth, in other words, two earthquakes per minute. Of this enormous number, an average of one is catastrophic, a hundred are destructive, and a hundred thousand are perceptible. Earthquakes inflict great damage. Starting from the time of the Ashkhabad earthquake in 1948 up to our time, over 1 million people have died from them in different countries of the world. The material damage, according to the United Nations, is about \$ 10 billion per year.

It is believed that about a half of the population of the earth lives in a seismically active zone exposed to earthquakes. It includes one quarter of the territory of our country which holds about 20 percent of the population. An enormous industrial and agricultural potential of the country is concentrated here. It is therefore not surprising that in the entire world, and especially in our country, a lot of attention is focused on predicting earthquakes, and preventing material and human losses.

What is meant by predicting earthquakes? First of all, predicting the site of a future earthquake, secondly, its strength, and the most important, the time when the elemental misfortune should occur.

The first two problems have now been shifted from science from among the unresolvable to quite resolvable tasks. In any case, for such highly developed industrial countries as the Soviet Union, Japan and the United States. This is done based on the so-called system of seismic zoning which is depicted in the form of maps with the indication on them of seismically active zones and

the strength of possible earthquakes. Now such a unique fairly detailed map has been created for the entire territory of the Soviet Union. It provides an idea about where in our country an earthquake could occur and at what strength.

Now the main problem is being solved, determination of the time when the elemental misfortune could occur. There are several certificates of authorship for an invention and two diplomas for discoveries.

Among them, attention is drawn for example, to the change in chemical composition of water in wells during an earthquake. At this moment the content of radon, helium, argon and other elements change in the groundwater. The maximum increase in the content of these elements mainly occurs in the epicenter of the earthquake.

There is a method for forecasting earthquakes according to the change in the level of subsoil water before it. There is another method for the change in effectiveness of specific electrical resistance of rock massifs before local earthquakes.

All of these methods have one common shortcoming. It is that the earthquake is only predicted above the epicenter, and it is not that easy to find it. Earthquake epicenters have a tendency to migrate, and practically are never repeated at the same point. In addition, after the first earthquake in a definite region, many characteristics of groundwater, readings of electrical resistances of rocks do not change for a certain time. Precisely for this reason of the 300 jolts of varying strength in the region of Nazarbek in Uzbekistan, none of them was predicted.

It was necessary to invent a method of defining earthquakes so that it excluded this shortcoming. It was necessary to reveal this phenomenon among the precursors of an earthquake which would make it possible to predict the time of the elemental misfortune for a large area and not of a definite point.

The essence of this method is based on detection by me of a new class of tectonic movements in the earth's crust called seismic-generating movement.

Before an earthquake the stress of rocks increases in its future focus. In this case, the increase is also observed above the focus, but to a lesser degree, and in the epicentral zone where the destructive earthquake should occur. These stresses are the cause of appearance of a new class of tectonic movement which is felt long before the beginning of the elemental misfortune.

These movements on the surface of the earth generally have a definite level for each locality, a background. Figuratively speaking, the earth breathes evenly. If an earthquake is approaching, then this new class of tectonic movements exceeds the reading of the background several times. At the same time these movements are noted on a large territory. They are noted in the zone where the destructive, catastrophic or perceptible earthquake will occur. Thus, by making observations of them on a large area, one can easily define from the movement of the earth's surface where the earthquake of a certain strength will occur. This makes it possible to predict the sites where the earthquakes will

be simply felt, and also in the epicentral zone where a destructive earthquake should occur.

The question can involuntarily arise of how the observations are made of these movements. For this we use already known resources, phototachymeters, optical-electronic, geodetic and others. At the same time, it is sufficient in the beginning to make observations once a month to determine the change in the background fluctuation, and then when the expected earthquake approaches, to make them everyday. At the end of the period they are made continuously every hour.

Calculations show that if an earthquake of 8-9 points is preparing, then it can be predicted 10 days before the catastrophe. An earthquake of 4-5 points can be predicted in several hours before the catastrophe.

The new method of forecasting earthquakes stipulates conducting of observations of enormous territories both with the help of ground and in a set of ground and air resources. In the future it is quite possible to conduct these observations in combination with ground, air and space resources for vast territories. Wide-scale, highly accurate observations of the condition of movement of the earth's crust are stipulated. They will make it possible to predict beforehand the sections where an earthquake should occur and to determine the time for its beginning. In other words, the possibility has been provided of anticipating the underground element, and protecting material valuables and people from its destructive forces.

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# ISMAILLY EARTHQUAKE ANALYZED

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 9 Dec 81 p 4

[Article by D. Melikov, in-house correspondent: "When the Earth Shakes"]

[Text] The first of the "sensitive" jolts, as they say here, occurred on 30 November at 03:30. The last took place on 7 December at 06:50. Between them the seismologists recorded at least 32 jolts, 4 of which were classified as those that do not occur without a trace.

Ismailly is a small Azerbaijan city and dozens of villages spread around it. They were dozing and did not suspect that the underground forces were preparing for a jolt.

The rumble burst into the closed windows and doors of the houses, rousing everyone at once. It seemed that a giant empty barrel was being carried over cobbles. All the residents, young and old, poured out of their houses onto the streets. Then the eye-witnesses will say that "their legs could not carry them away." Within 2-3 seconds the city felt its first strong jolt. The earth which was considered a support, strong and firm, went out from under their feet. One- and two-story brick buildings were deformed from rectangular right before their eyes. Windows and doors flew out.

The first jolt of the earthquake fortunately did not involve any human victims. This is the most important. Other jolts followed after the first, but weaker.

"The Ismailinskiy rayon was not lucky this year," says the first secretary of the party raykom Gashim Aslanov. "In the beginning of the year there were the strongest winds, snowstorms, then mud streams descended on the village, in summer we were pretty well beaten with hail, and now an earthquake. Over 2,000 houses suffered. Ismailly, the villages of Midzhan, Kalyndzhak, Mudzhi, Kaftaran, Rushan, Vang and Topchu got more than their share."

Now because of rapid measures, the situation has normalized. The residents who were homeless were placed in heated wards and mobile dormitories. Mobile kitchens, trade enterprises, general services and medical stations are operating.

A special republic commission has been set up which has been entrusted with solving all the problems of the Ismailly residents.

Candidate for membership to the CPSU Central Committee Politburo, First Secretary of the Azerbaijan Communist Party Central Committee G. A. Aliyev visited the region the other day. The leaders of different ministries and departments here were rapidly given instructions for normalizing the situation in the region.

Spartak Agamirzoyev is the head of the service of emergency reports of the experimental-method geophysical expedition of the scientific center "Geofizika" of the Azerbaijan Academy of Sciences together with his colleagues registered in Ismailly for a long time. They are looking for answers to difficult questions which the threatening phenomena of nature raise.

He begins the conversation about the Ismailly events with a small excursion into the past.

"This year in Azerbaijan on 29 July and 19 November near the city of Shemakha, earthquakes were observed registering 5 points. However, they were accompanied by a strong release of energy which was liberated in the epicenter of the earthquake. It is no accident that it was felt over the entire territory of Azerbaijan. In Baku, for example, the oscillations reached 4 points."

The last earthquake in Shemakha was a unique trigger for a series of Ismailly earthquakes.

What occurred in Ismailly, in the language of the seismologists, is called a "concert of foci." There were 34 earthquakes in a week.

The studies conducted at the seismic stations "Shemakha" indicate that in this zone there is a tectonic center which consists of main and subordinate smaller faults in the earth's crust. This "devil's center" is also the generating system which provokes the shaking. Active formation of tectonic structures is taking place in the region.

An interesting law is noted in the earthquake in Ismailly: between the first, second and third strong jolts there was an average of 50 hours, while the interval between the third and fourth was already 70 hours. This makes it possible to hypothesize that a gradually damping is occurring in the work of the focal zone.

Not far from Ismailly, an eruption of a mud volcano was found. This had never before been observed here. It is obvious that the tectonic shock produced thermal waters along the argillaceous mass of the earth, and three craters were formed.

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## EARTH NOISES USED TO PREDICT EARTHQUAKES

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 21 Jan 82 p 4

[Article: "Ten Hours before the Catastrophe"]

[Text] Perhaps only the seismologists are given the suprising possibility of seeing the "voice" of the earth by the specific nature of their profession. Deep fluctuations in beds, "breathing" of the crust, impact of marine tides, all of this is reflected in the characteristic lines running over the screens of the oscillographs. The loudspeakers connected to the sensitive instruments make it possible to "hear" this voice. They emit an even hum, then rustling or sighs.

By the way, the guards of earthquakes are not at all happy with this rare opportunity. The constant "voice" of the planet interferes and distorts the even lines of the seismograms. In order to eliminate this background noise they place all kinds of filters on the equipment. But they do not help when the planet raises its "voice."

Candidate of physical-mathematical sciences I. G. Kerimov understood this when he was in the United States on a scientific exchange. Here he focused attention on a strange fact: on the screens of first one, then another display in the California Seismological Center the thin lines of the seismograms suddenly began to swell with incomprehensible thickenings.

"What is the matter?" he asked the operator. But he only waved his hand unconcernedly.

"Nonsense! Something is wrong with the communications line."

The answer did not satisfy Kerimov. Some kind of law was clearly traced on the flashes on the screens and it could hardly be explained by technical malfunctions.

"To be honest, I thought about this phenomenon only much later when I had already returned to the Motherland," Ikram Gadzhiyevich recalls. Then the idea popped into my mind: does this 'voice' of the planet have to be muffled? The background noise changes all the time on the oscillographs and to the hearing. Do these changes not carry definite information which makes it possible to glance 'within' the depths of the earth?"

Kerimov and his colleagues from the scientific center "Geofizika" of the Azerbaijan Academy of Sciences disconnected the filters from their apparatus. The planet "began to speak" in its own "language." It turned out that a change in the height of sound could indicate a lot not only about fluctuations in the beds deep underground, but also about the density of the rocks, and the boundaries of their occurrence. In combination with the already known methods, this information, in particular, helps to predict much more accurately the mineral fields.

It was then found that the planet was relating not only about what is occurring underground, but also far around. In any case, it clearly warns about distant earthquakes in 10-15 hours before their occurrence. In this case, the "voice" of the planet in the loudspeakers becomes deeper. Finally, on the screen of the oscillograph a "peak" flits by, the signal from the beginning of an underground catastrophe.

Experiments have shown that it is best of all to "listen" to earthquakes from afar, hundreds and thousands of kilometers, I. G. Kerimov says at the end of the conversation. It is precisely from here, from the calm zones, that the instruments record most accurately all the shades of the earth's "voice." And they warn when it will pass into a threatening tonality.

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DEVELOPMENT OF DESERT ADVOCATED

Ashkhabad TURKMENSKAYA ISKRA in Russian 8 Apr 82 p 3

[Article by A. Babayev, President of the Academy of Sciences of the Turkmen SSR, corresponding member of the USSR Academy of Sciences: "The Desert, Strategy for Development"]

[Text] Many believe that the desert is a lifeless expanse of earth scorched by the sun. In fact, when you look at it from an airplane or from the window of a train, you only see a yellow ocean of sand. However, its depths hide valuable metals, oil, gas and coal. Cities and industrial enterprises have grown up here. We are only beginning to place the reserves of "dead" earth at the service of the national economy. They are such that today the desert should be considered a viable and even rich area with high economic potential.

The experience of the republics of Central Asia and Kazakhstan has proven that deserts can become zones of stable agricultural production. Now on millions of hectares of previously uninhabited sand, cotton, wheat, vegetables, grapes, fruits and other crops are being grown. The development of these areas is not a simple and inexpensive matter. But we have to bear in mind a very important advantage because these lands, like no other, are supplied with heat. The imperceptible vegetation of the desert has always been a source for maintaining millions of heads of sheep and camel. Economists have computed that production of animal husbandry in the desert zone costs two-fold less than in the middle belt of the country. The potentialities for its development in this region have far from been exhausted. Only comparatively recently a scientific task was set of enriching the natural feed resources of the desert pasturelands. Progressive methods have already been found, verified and widely introduced into production. They do not require major capital investments, but they permit an increase in the harvest of feed crops several times.

Great experience has also been accumulated in developing desert territories. The scientists have given the production engineers a number of verified recommendations. But they are being used little. The advantage of introduction is obvious: the invested capital is compensated for fairly rapidly.

The main point needed for development of the desert is water. They say in Central Asia: "Water, not the earth, gives birth." Precisely in this region

one can reduce to a minimum the dependence of agriculture on the elements or with the help of irrigation, obtaining high harvests of the most diverse crops.

However the deserts are extremely poor in fresh water. According to the calculations of the scientists, all the runoff of the main rivers in Central Asia, the Amudar'ya and Syrdar'ya, in the next 10-15 years will be completely directed towards irrigation and other water management needs of the Aral Basin. However even with this condition it is impossible to solve the age-old problem of the shortage of water on enormous territories that are promising for industry and agriculture. It is no accident that the possibilities are being studied for shifting part of the runoff of the Siberian rivers to Central Asia and South Kazakhstan.

But a complex question is placed before the scientists: what will be the consequences, and how will this influence the ecological and social-economic conditions of the region? Discussions and searches are now underway for the best variant of the project. We have to search for the possibility of improving the water balance of the desert itself.

There are two methods here: the use of fresh groundwater and collection of atmospheric precipitation. The first is already being used to a certain measure. For example, the industrial complex of West Turkmenistan consumes water which hydrogeologists searched for in the Karakumy. The second method is being used in limited scales, and strictly speaking, has not yet emerged from the primitive stage. Cattle breeders for a long time have collected rain water by the simplest methods in argillaceous areas, giving it the possibility of accumulating in underground wells. A definite reserve of moisture is thus formed: one hectare can provide enough for a year for a watering place for a flock of a thousand sheep. The scientists have perfected this ancient popular method and have formulated engineering devices. By using them one can obtain even more inexpensive fresh water. Unfortunately, the innovations are being slowly introduced.

The brine drainage water which is annually removed from the fields in enormous quantity must become an important reserve. It is still not only not being used, but even inflicts damage. It is simply discharged into the desert, destroying individual links in the ecological system. At the same time, this water, for example, can be used to feed cattle. In addition, it is easier to freshen it than seawater, and in this case it could become an important source for water supply in the desert.

It is of course necessary to expend energy and resources for this. But without electricity, it is unthinkable in general to develop and to operate natural resources in the desert. However, in the Karakumy and Kizulkumy there is practically no energy base. There are potentialities for organizing one, on the oil and gas fields one could construct power plants in comparatively densely populated regions.

It is a little more difficult with animal husbandry. The pastureland is spread out and each farm area requires a lot of energy. It is more advantageous here to obtain electricity by forcing the wind and sun to "work." There are

already experimental generators which convert solar energy into electric. It is true that the specialists believe that they are still incomplete: they have low efficiency and cost a lot. However, in small power units, these shortcomings are put in second place. It is thus time to begin extensive experiments on the practical use of solar units for small populated areas of the desert.

Wind electric generators are a long resolved problem. But you would be surprised at the people who have been working in the desert all their lives who rarely see these simple mechanisms. At the same time, in many regions of the Central Asian desert, a stable wind is guaranteed almost everyday. In small populated areas wind power plants with output from 130 kilowatts could provide an energy minimum. They are used well on pasturelands for lifting water from wells, irrigating sections near farms and freshening water. In a word, one can switch to mass electrification of the desert animal husbandry. This will be a great contribution to the development of sheep raising on desert pasturelands.

In the complicated multiple-plan task of developing the desert, one has to look far in advance, otherwise enthusiasm for resolution of one problem generates another. For example, the use of a large part of the runoff of the Syrdar'ya and Amudar'ya for irrigation resulted in the fact that the influx of water to the Aral Sea was drastically reduced. In the opinion of the specialists, it could completely disappear with time. With the current acute shortage of fresh water it is difficult to prevent this. It is therefore necessary to have an accurate forecast of the possible changes in natural conditions in order to take preventive measures in time.

Man has been set with the need to transform natural conditions. But in this case he is obliged to learn how to foresee probable consequences of his actions. The scientists, engineers, and other specialists are currently conducting painstaking work for redistribution and efficient use of water resources of Central Asia and Kazakhstan. We would like to be confident that the task will be solved correctly, but we cannot go beyond the limits of permissible changes in the natural environment.

We are troubled today by another ecological problem in the logical link with the future of the Aral Sea. Two years ago a blind dam covered the gulf covering the Caspian Sea to the Karabogazskiy Gulf. Thus, the path was cut out for 6-7 cubic kilometers of water annually entering from the Caspian to the Karabogaz and evaporating from its surface. This measure made it possible, without accelerating the decrease in the level of the Caspian Sea, to take from the rivers entering it roughly the same quantity of water for irrigation. But naturally, the gulf itself began to gradually dry up. More of its bottom was exposed, the wind took away the salt projecting onto the surface of the land. The unique chemical richness of the gulf disappeared. Now we have to think how to control this extremely unpleasant phenomenon.

The presented example only indicates once more how carefully we have to study the possible consequences of "surgical intervention" into nature so that the advantage of one would not result in the loss of another. No transformation is made simply for the sake of the transformation itself, but for strengthening the economic power of our country as a whole. Here it is necessary to give

especial importance to the long-term forecasting of natural processes in the sites of active influence of man on the environment. We should always remember that the desert is not an opponent which man must conquer, but his good partner towards which he must have a good relationship.

When we think about the desert, and what it can provide man, then a feeling of alarm is added to the feeling of joy. For every department here acts independently, and many without consideration. At times this results in unnecessary expenditures which do not provide perceptible results. It is finally time to have a unified scientifically substantiated strategy for developing the desert. Without a comprehensive plan one can hardly count on further serious success.

It is little to build channels for irrigation, watering wells and to secure the sands. It is necessary to plan the development of the economy as a whole, in harmonic correlation, and then the expenditures will be considerably lower and the economic effectiveness will increase many times.

In our country, as nowhere else in the world, a lot has been done to develop the desert. But if we compare what has been done with the potentialities, with enormous output that could be obtained from the desert (and the desert occupies 250 million hectares in our country, more than all the arable land in the country), then we have to admit that what has been done is only a successful exploration. Essentially our deserts are one virgin land which waits its wise developers.

9035

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## BRIEFS

**AZERBAIJAN EARTHQUAKE**--Seismic stations of the republic yesterday recorded an underground jolt at 08:10 Moscow Time. At the focus of the earthquake which was located 180 km to the northwest of the regional center of Zardob, its strength was estimated at 6 points on a 12-point scale. There were no victims or damages. In commenting on this fact, the director of the Institute of Geology, Academician of the Azerbaijan SSR Academy of Sciences A. Ali-zade reports: "Seismic activity has recently intensified in Azerbaijan. Underground jolts which began last year in Ismailly were not unexpected for the scientists. On the map of seismic intensity which was constructed from the results of lengthy observations, this region was isolated as a section of increased seismicity. The number and strength of the jolts here constantly increased. They were repeated in February of this year and renewed last week. Then these manifestations were shifted to the south and southwest. This confirms the predicted activation of movements in the earth's depths over the major transverse fault of the earth's crust which stretches from the mountains of the Major Caucasus to the ridges of the Minor Caucasus. Study of the laws governing the seismic activity by the scientists of Azerbaijan brings the seismologists closer to a solution of the main task, increased reliability of predicting earthquakes. [Text] Moscow TRUD in Russian 4 May 82 p 4] 9035

**KAMCHATKA EARTHQUAKE**--The underground jolt which occurred last evening on the shores of Kamchatka aroused the residents in the oblast center and the surrounding settlements. At the Petropavlovsk seismic station of the Institute of Earth Physics of the USSR Academy of Sciences, the TASS correspondent was told that the epicenter of the earthquake that was recorded at 03:16 local time was located 100 km to the east of Kamchatka in the Pacific Ocean. In Petropavlovsk-Kamchatka, its strength was 4 point. There was no damage. [Text] [Moscow TRUD in Russian 10 Mar 82 p 4] 9035

**FRUNZE EARTHQUAKE**--Frunze, 16 Apr--On 15 April at 20:16 Moscow Time, an earthquake occurred in Kirghiziya. The strength at its epicenter in the region of the Alay ridge reached 5 points. Weaker jolts were felt in Khadarken, the settlements of Frunzenskiy, Sovetskiy, and the Batken village. No people or structures suffered. [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 17 Apr 82 p 4] 9035

**STRONG EARTHQUAKE**--On the territory of Kirghiziya, Uzbekistan and Tajikistan, an earthquake occurred at 19:42 Moscow Time on 6 May. Its strength at the epicenter was 7 points. The focus of the underground jolts was located 20 km to the north of the city of Kyzyl-Kiya and 35 km to the east of Fergana. The earthquake was felt in Kysyl-Kiya and Fergana to 6 points, in Tashkent, Osh and Namangan, about 5 points. Echoes of the underground storm which erupted in the branches of the Alay ridge reached many regions of Tajikistan. [Text] [Baku VYSHKA in Russian 8 May 82 p 4] 9035

EARTHQUAKE REPORTED--On the territory of Kirghiziya, Uzbekistan and Tajikistan an earthquake occurred on 6 May at 19:42 Moscow Time. Its strength in the epicenter reached 7 points. The focus of the underground jolts was located 20 km to the north of the city of Kyzyl-Kiya and 35 km to the east of Fergana. The earthquake was felt in Kyzyl-Kiya and Fergana to 6 points, in Tashkent, Osh and Namangan about 5 point. Echoes of the underground storm which erupted in the branches of the Alay ridge reached many regions of Tajikistan. In Dushanbe and Khorog the strength of the jolts reached 3-4 points. In the regions close to the earthquake epicenter, certain old structures and animal husbandry buildings suffered. [Text] [Moscow PRAVDA in Russian 8 May 82 p 6] 9035

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END